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AND

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AN OUTBREAK OF ANTHRAX.

BY J. AITKEN, JUN., M.R.C.V.S., DALKEITH.

I WAS requested by telegram from County Police to examine cattle at —, a distance of twelve miles from my place. On my arrival at 6 p.m., I found one bullock dead in a court, and two heifers ill. The owner informed me that within two days, prior to my visit, he had lost four animals.

On making a casual examination of the carcase, the emphysematous state of the body, the congested appearance of the conjunctivæ, and the discharge of bloody matter from the rectum were almost of itself sufficient to convince me that anthrax was the malady with which we had to deal. I then had the animal placed in a slipe and taken to a field where the *post-mortem* examination was made. On laying the abdomen open I found great extravasations or petechial patches throughout the omentum, the spleen black and engorged, and the bowels suffused with blood. I deemed it unnecessary to make any further examination, being perfectly convinced that the animal had died from anthrax. The grave being already dug but not prepared with lime, the burial of the animal was postponed, and the slipe placed over the carcase until the morning when lime was procured. After a free use of carbolic oil we went back to the farm and turned our attention to the suffering animals, one a black Galloway heifer suckling two calves, the other a quey in calf.

Examination of the heifer showed her temperature to be 107°, pulse 130, respirations greatly accelerated, and the surface and extremities of the body ice cold. On being raised with difficulty, the twitching of the muscles (subsultus tendinum) was one of the most prominent symptoms in this as in the other cases, and in a very few minutes the animal again lay down with her head resting on the ground and her nose protruded. All affection for her calves seemed lost, and

they were at once removed. Seeing a fatal termination must soon ensue, I advised the owner to have her destroyed, and so entitle him to claim half her value, as the loss he had already sustained was heavy. The owner agreeing to this, we had her destroyed, and arranged to make a *post-mortem* on her next morning, and thus confirm our previous diagnosis.

The temperature of the white quey was 105°, general temperature of the body good, pulse 70, respirations normal, and again, as in the previous cases, twitching of the muscles, while the animal showed a disinclination to be moved forward. As the quey was in calf, and the symptoms not so pronounced, we decided to treat the animal and give her a chance of recovery. Next morning I found her worse. Temperature 107°, pulse 100, respiration hurried, but the temperature of the surface of the body was fairly good.

I gave ½oz. of carbolic acid in a pint of linseed oil, and left her with a pailful of gruel standing before her, sprinkling her bedding and surroundings freely with carbolic acid and lime. The three others which were in contact received the same treatment, and carbolic acid was given in gruel night and morning for a week afterwards. The calves received a proportionate dose.

I next proceeded to make a *post-mortem* examination on the heifer slaughtered the previous night, and found the usual characteristic lesions plainly visible, leaving no room for doubt that we had a case of malignant anthrax.

June 12th.—Quey much the same. Temperature still 107, continued carbolic acid and gruel. In a day or two temperature gradually fell to normal. She subsequently completely recovered, and was turned out to grass with the two calves belonging to the other heifer in another field.

Some may question this quey being affected with anthrax. If so, why were the symptoms so exactly similar to those of the animals that died, and of the one that was killed and proved on examination to be such a decided case of malignant anthrax?

Could any readers of this JOURNAL, interested in this matter, inform me as to how long this ground would require to be kept free from stock?

II.—*History of the Outbreak.*

About the first week of June of this year, nine cattle were put in a meadow to graze. Within six days the owner

observed two of them ailing at night. A dose of linseed oil was given at once. In the morning they were found dead The following day two others were found dead, when he at once sent for his veterinary surgeon, who advised the removal of the animals from the meadow, and a dose of Epsom Salts and turpentine to be given to them. No *post-mortem* was made on the carcases, which were buried in the same meadow. On the following day—Wednesday, 10th June—another animal died. His veterinary surgeon then advised owner to report to police, and ask them to wire for me as local inspector, as he suspected anthrax.

Subsequent inquiries showed that about the end of April, 1895, when this farm was in other hands, several cattle —six or seven, I believe—died after a few hours' illness. *Post-mortems* were made, I understand, on several of the carcases by the owner's veterinary attendant (not the present veterinary attendant), who gave it as his opinion that the animals died from "Fardel Bound," caused by over-feeding on cotton cake, and treated the remaining stock accordingly. The carcases were buried in this meadow—a marshy bog—without any disinfectant being used or precautionary measures being taken. On making a thorough examination of the ground, we found that the animals put in to graze in the first week of June of this year, were grazing over the graves of those animals buried in 1895.

It will be remembered that previous to the present outbreak we had a spell of excessively warm weather followed by a plenteous rain, which brought a luxuriant crop of grass, the rain leaving the meadow in a spongy condition.

I leave the profession to draw their own conclusions as to the cause of the outbreak.

In justice to the local authority, I would like to add that they have done everything in their power to have this ground thoroughly deprived of all its toxic properties. It has been fenced off, and the grazing on, or removal of any grass therefrom, strictly prohibited. I trust these precautions may prove successful in preventing any further outbreak of this most deadly disease.

The local authority applied to the Board of Agriculture for permission to exhume the carcases buried in 1895, to see if we could find any bacilli or spores, but were refused, on the grounds that it was dangerous to all concerned.

ANTISEPSIS IN PARTURITION.

BY X.

THE necessity for the exercise of great care in rendering everything aseptic, as far as practicable, in dealing with cases of parturition, is often spoken and written about, but it is not, I am afraid, always acted upon with as much circumspection as the attendant dangers of its neglect demands. We owe it to ourselves, to our employers, and to our patients that no suspicion of contamination from the person of the operator, or from his instruments, should prejudice the recovery of animals to whose aid we are summoned. We know that many of the old school will laugh at our precautions, and call them high falutin, but now and then we hear of fatalities from the neglect of these precautions that justify our adoption of them. Sooner or later, the man who boasts that he has had the same castrating knife for ten years, uses it for opening abscesses and for other operations, and washes it *now and then*, will, along with his client, have regrets. I know a practice where, in a fortnight, four cases of septic metritis occurred in mares which had to be assisted in foaling. In two of these cases delivery was effected by the use of hands and ropes only, and there was no great difficulty about the operations; in the other two cases instruments were employed. Three of these mares died. The instruments were washed after being used, but I don't believe that the ropes received even this attention; and yet, to my way of thinking, the rope is far more likely to harbour infection than the hooks.

For several years I have made it a rule in every parturition case to wear a pair of fisherman's oilskin trousers (which admit of thorough disinfection) over an ordinary pair, and to remove the rest of my clothing except boots. After the case is over I wash and disinfect my hands and arms with sublimate or carbolic acid, and then have the instruments and ropes treated to a bath of hot water and sublimate or creolin. I invariably wash out the uterus, using sublimate for mares and permanganate of potash for cows. It can be done in a very few minutes, the handiest douche being three feet of indiarubber tubing kept for the purpose.

One can readily dissolve an ounce of sublimate in eight ounces of spirit, and three drachms of this solution in a quart of water is about 1 in 1,000. This can be mixed in a pitcher and poured down the tube, the operation causing very little delay. Permanganate solution is, of course, readily made from the crystals, or a supersaturated solution may be carried.

Instead of using perchloride of mercury for disinfecting instruments and hands, formalin 4 per cent. may be employed. It is very cheap, and is, too, an excellent preservative for pathological specimens, being much used in hospitals now for this purpose.

While speaking of parturition, I should like to mention a rather remarkable delivery. A four-year-old mare, a primapura, was unable to foal; both fore legs presented, but the head could not be got as it was lying back on the right side, the nose firmly embedded in the flank. The fœtus could not be pushed back, though several attempts were made. The two fore-legs were corded, and by the use of a block and tackle, the fœtus was extracted as it lay, and the mare made an uneventful recovery. The foal was a well-grown one, rather above than below the average size.

DEATH OF SHEEP FROM ŒSTRUS OVIS.

In Monmouthshire and Herefordshire flock-masters have been losing a great number of sheep from the nostril maggot. The infection seems to be so general that some farmers are stated to have lost nearly all their sheep. It is reported that a similar outbreak occurred twenty years ago, when great numbers of sheep were lost.

As sheep seldom die from the attacks of œstrus ovis, and, indeed, usually show very few symptoms except, perhaps, cough and nasal discharge, and occasionally symptoms of "gid," it would be interesting if some member of the profession in the districts named would verify the accounts which have appeared.

REDWATER, OR CATTLE TICK PLAGUE IN QUEENSLAND.

The chief inspector of stock in this great cattle-rearing portion of the Australian continent, has lately forwarded to its Government an exhaustive and interesting report of the history and nature of the above-mentioned disease, of which report, the following is an abstract:—

The first intimation of the appearance of ticks in Queensland was in September, 1891, and reported to be introduced by cattle from the Mexican Gulf, the buffalo in that territory having long been known to be tick infested, but more or less immune to the attacks of the insect.

In 1894, Dr. Hunt, of Hughenden, an eminent bacteriologist, and Mr. Pound, were commissioned to investigate the disease with the result, to quote the language of the report, "that it has now been definitely ascertained that the disease is identical with the Texas fever, and caused by the identical same ticks."

When this conclusion had been arrived at, inquiries were at once set on foot to obtain information from all places in which redwater was supposed to have an existence. In America, Dr. Salmon, Chief of the Bureau of Animal Industry, Washington, was communicated with, and complete reports of the investigations of Texas fever, obtained from him, showing that the disease was due to a tick, *Boophillus bovis*, which the cattle tick in the north (Queensland) closely resembled. Professor F. S. Billings, opposed Dr. Salmon's theory, as he attributed the fever to a bacillus in the blood of the cattle.

From Africa, the Government Veterinarian at Port Elizabeth, reported that he was strongly opposed to the theory that ticks were responsible for redwater. From England reports were received from Professors Brown and Williams agreeing with the results of the American investigations.

Next follow lengthy details of the preventive measures that have been put in force. The limits of the quarantine, in respect to time and extent of country, *i.e*, 900 miles in length, the disinfecting measures adopted by the railway authorities, the closing of certain routes to traffic, and the appointment of cattle commissioners and sub-commissioners, inspectors and assistant inspectors, all with the view thus stated—"to confine the ticks within such limits, that can only be done by absolutely prohibiting the travelling of stock from infested areas."

Dr. Hunt furnishes the following life history of the tick. When first attached the ticks are of almost microscopic dimensions. In the course of about fifteen days in summer—a longer period in the colder weather—the female ticks attain their full size, increasing in size rapidly during the last three days, and when mature drop off on to the ground. In the course of four days they commence to deposit their ova on the ground, the number of eggs from each varying from 1,700 to 2,500, averaging 2,000.

In the course of from 27 to 42 days, according to the temperature and humidity of the atmosphere, the whole of the eggs are hatched, and the newly-hatched ticks are ready to attach themselves to some warm-blooded animal. In one

instance as many as 16,000 ticks were counted on one dead bullock. Assuming all of these to have matured, it will be seen that it is possible for the ticks on one animal to deposit 32,000,000 of fertile eggs, and it is again liable to be affected with a fresh generation of ticks in 42 days, and to repeat the process indefinitely at intervals during its life. The young ticks seem instinctively to crawl upwards on any object with which they come in contact, and they have been found literally covering the tallest of grasses from top to root. Although horses are immune from the characteristic fever they produce, they carry the ticks, and have thus helped to spread the pest. The report then refers to the failure in America or elsewhere, by scientific means, to induce immunity; but that the ticks being the sole cause of the disease having been conclusively proved, it follows that if they can be exterminated, the stamping out of the disease will be practicable. Experiments in this direction have proved that oil, preferably cotton-seed oil, is the most certain and effectual destroyer of the tick. Acting on this discovery, arrangements have been made for the construction of public dips on the main quarantine lines and at the termini of the railways, and to encourage the construction of private dips by cattle owners, the Government supplies the oil free. In addition to dipping the cattle in oil, the systematic burning of infested pasture is recommended.

The investigators are finally of opinion that the disease is analagous to malarial fever in man, cattle being subject to repeated attacks after being once tick infected.

Ticks and their Destruction.

Dr. M. Francis, Veterinarian of the Texas Experiment Station, has lately drawn attention in a paper by him to the method of destroying ticks on the cattle of Texas, and, as the study of the tick pest is one of his principal duties, this description is of great value. After several unsuccessful attempts to destroy the pest by various means, the dipping process has been adopted in Texas with very gratifying results. A large vat of five thousand gallons capacity is used, and the cattle are forced to swim through it. Various carbolic and arsenical sheep-dips were employed as solutions in the vat, but the results were not satisfactory; either the cattle had to be kept in the dips for too long a time in order to kill all the ticks, or they were irritated by the solutions. This led Dr. Francis to try the effect of oil in destroying the ticks. It is well known that grease or oil, of almost any kind, is fatal to insects, lice, &c., and known facts as to the life-history and

structure of ticks gave presumptive evidence that oil might be successfully substituted for the various commercial dips which had been employed. A layer from three-quarters to one inch in thickness of crude cotton-seed oil on the water in the vat was first used, the cattle being forced to swim through the vat, so that when they emerged they were covered perfectly with oil. This had no apparent effect on the cattle, but was found to be exceedingly fatal to the tick, and was very much superior to any other treatment tried. Dips of different nature were experimented with, but none as yet used has given such satisfactory results as the cotton-seed oil. Kerosene emulsion was found to have no practical value; crude petroleum irritates the skin, and emulsifies with water; resin oil is useless for the purpose; corrosive sublimate is too dangerous, and is not very fatal to ticks even in solution 1·250 in water, and tobacco sheep-dips have no practical value. Dr. Francis is at present studying the effects of other oils, the most promising being West Virginia Black, a mineral oil.

FROZEN MEAT.

It is a well-known fact that butcher-meat can be preserved almost indefinitely, provided it be kept in an atmosphere where the temperature is constantly below freezing-point. In a report made to the President of the Republic in 1891, M. de Freycinet, their Minister of War, says:—"It is an ascertained fact that meat frozen at a low temperature can, even after preservation for a long time, be substituted for freshly-killed meat, that it retains in this condition all the qualities of ordinary meat, and that the dealer need fear neither loss nor difficulty in handling, nor any repugnance on the part of the consumer. It has been further demonstrated that distribution of such meat may be accomplished, without any precautions, to places so far distant from the freezing-chamber as to require a journey of two days to two days and a-half, and this in the hottest weather." This authoritative statement prepares us for the statistics of the dead-meat trade, which show that in 1895, there were imported into France 116,500 carcases of sheep, and 4,500 quarters of beef in a frozen condition. Out of this total 40,000 sheep and 600 quarters of beef were sold in Paris.

In foreign countries which consume frozen meat, such as England, there is no display of the meat on shop counters. The purchaser comes and selects his joints—often of great

weight—in the cold chamber, and has them sent home at once; besides, these purchases take place only at certain hours of the day. When thus treated, the meat is undoubtedly a success, and looks very well on the table. In Paris, the frozen mutton is principally bought by hotel-keepers and restaurateurs; the army also consumes a quantity.

I have myself eaten many a leg of frozen mutton. Having bought it in the morning a veritable lump of ice, I place it, shank downwards, in the kitchen, and wait till it is completely thawed—some seven or eight hours. At the expiry of this time it is easy to see that not a drop of juice has fallen to the ground. Then I have it cooked, and every time that I act thus I get a capital joint, juicy when cut up and quite tender, but slightly deficient in flavour. When such precautions are taken, one may say that frozen meat is good and may prove of great utility to the population of large towns and to the army. But is this the usual custom and the usual result? I am afraid not, especially since attempts have been made to import frozen meat from South America and from Australia. In the case of sheep, cut in four as required by law, we have to deal with flesh which, not being thick at any point, allows the process of thawing to go on at the same time on the surface and in the deeper parts. The drawback in this case is not so serious. But beef, when treated in the same fashion, offers more resistance to the thawing process; it softens slowly and displays ugly colours —a serious disadvantage which traders have tried to get rid of, but hitherto without success. Mutton is sold rapidly, being easily handled and cut up, and there is very little waste. Beef, on the other hand, has to undergo an infinity of cutting before it is divided into pieces suitable for roasting or boiling. These various operations never fail to spoil the beef, because they expose so many surfaces to atmospheric influences. Thus, when we see quarters of beef frozen all over and with a fine appearance when they have just come from the cold chamber, our surprise is great when we see them a short time afterwards, thawed and fragmentary, presenting colours that are anything but pleasant and certainly not appetising.

Here I would state parenthetically that in cold weather, when the temperature is about freezing-point, all fresh butcher's meat assumes a bright red tint, which has a very pretty effect. If the cold increases the cut surfaces become darker, browner, and we see little ice crystals in the interstices. As a general rule, we may say that the colour of

meat has a great influence on its value. It depends greatly on the age, sex, race, mode of feeding—factors with which, however, we have nothing to do at present.

Some hours after leaving the freezing chamber, when the temperature is pretty high, the whole surface of the quarter of beef is of a faint white colour, as if sprinkled with starch, or rather as if it had been washed with soapy water. This colour is fugitive, and soon gives place to more enduring colours. The fat becomes, at the end of three or four days, of a dull yellow, something like old waggon-grease; sometimes it goes further, and assumes the colour of yellow ochre, is even greenish in places, without, however, giving forth any bad smell. One might almost say—and it is important to note the fact—that such meat has been rendered imputrescible, or little liable to putrefaction, the low temperature to which it has been subjected having destroyed the germs of fermentation. The external colour of certain muscles is dark purple, brown, here and there chocolate; it changes wonderfully when a deep cut has been made, and shows a bright red, recalling, as it were, the life in which the surface, so thoroughly modified, seems no longer to take part. Standing by, and watching the various changes which meat undergoes, when exposed to the dry atmosphere, watching the juice as it drips down to the ground, and the fat as it becomes dull in hue, and presents the appearance of the fat of a dead body, we perceive, I repeat, no disagreeable odour, let our sense of smell be as acute as it likes. If we wait a little longer, and if a damp cold come on, the meat will become "sticky" on the outside, and will soon give forth the smell of mustiness, which we all know so well. It will become covered with fine mould of various colours—black, yellow, green, or grey (*aspergillus, mucor, penicillium*), with downy tufts, such as grow on jam. These mouldy patches seize first upon the fat, and afterwards on the muscles, and are very tenacious and very obstinate; a brush cannot remove them altogether, a knife is required. Mr. Marchal, an army veterinary surgeon, in a book recently published, "Butcher-meat preserved by Freezing," recommends distinctly that meat should not be transported from intense cold to a temperature relatively high; he says it is better to expose it first to a current of dry air, and recommends not only thorough ventilation but frequent rubbing with linen cloths, in order to prevent the musty smell.

It has been admitted by sanitary authorities that it is necessary to withdraw from public consumption all "sticky" meat in which the smell of mustiness and damp is perceptible.

I have taken the same line of conduct with regard to mouldy meat, as I cannot admit that meat can be considered fresh which has many specks of mould about it. We may show toleration in dealing with superficial decay in jam, in cheese, in hams, in the envelopes of certain sausages and, generally, with the externals of food preserved with sugar or with salt, but I think we ought to be more rigid in the inspection of bread and fresh meat, these being substances which decay rapidly, and which ought therefore, to be rapidly consumed; they are at the same time essential elements in the food of the human race and we have a right to demand that they be presented to us without any trace of damage.

These assertions, easily established even by a hasty examination of meat, are not the only ones which it is desirable to establish. Meat, whether beef or mutton, which has been kept continuously frozen from the moment of entry into cold chamber either on board the ship which has to carry it from its place of origin to France, or in the warehouses of the large towns, loses some of its qualities if the cold is not maintained, if a complete thaw supervenes and, more especially if it has to be frozen a second time. We have already seen that thawing had for its effect, by softening the meat, to give it peculiar and unpleasant tints and to cause in certain regions where the cellular tissue is loose and abundant, the escape of a considerable quantity of its juice. If we re-freeze these pieces of meat that have been thus "melted," the intense cold seizes them in their new condition without in any way modifying their external appearance, or rather we may say that when the meat is re-thawed and exposed for sale, we find ourselves in presence of meat that is quite different from the original, destitute of brilliancy, without the original bright colour but presenting indescribable tints in its fat and a dull purple hue in its sticky, viscous muscles. On cutting it up the knife will find all the serum that has escaped, flooding the muscles with a magma, or thick viscid substance somewhat like marmalade in consistency. Even there we perceive no bad odour; nothing is exhaled from this "jellified" flesh, absolutely nothing.

The question now is, ought such meat to be condemned? I have debated this question with myself for a long time and I have come to the conclusion that there is nothing for it but to withdraw from sales carcases which have undergone congelation after several thawings, and whose repulsive appearance when once thawed reminds me always of anatomical subjects that have been macerated. Still I confess that I

lack a clear basis of judgment and I should be glad to have further data. I had always thought that with frozen meat one might pass all kinds, good and bad, and that our means of investigation were often incapable of discovering, amongst pieces several times frozen and thawed, those which ought to be withdrawn from consumption ; this is why, in the present paper I have endeavoured to trace out a line of conduct to be pursued with regard to meat that has been twice or thrice thawed in the course of transit, has given up to the surrounding air all its juices, and has finally become limp in the butchers' shops or in the markets. I say that then—when it has become weather-beaten, parched, dull and dirty-looking and unpleasant to the eye—it ought to be withdrawn from the market as being neither wholesome nor merchantable.

Frozen meat ought not to be carried about from one shop to the other. To spread it out in windows, or on benches, seems to me absurd : even to hang it up in central markets, at any rate in damp weather, is equally foolish. Just in proportion as such meat is pleasant to the eye when it comes out of the freezing chamber, with its bright colours unimpaired and sparkling with its myriads of frost-crystals, so does it become disgusting after two or three days' exposure to the open air. Those who wish to maintain the credit of frozen meat must present it to the public in a favourable light, and not wait till it has lost, by long exposure to the air, all its best qualities.

The following notes are interesting and important. M. Lagarde, of Havre, made investigations in 1878 as to the length of time that a sheep's carcase would remain sound after coming out of the freezing chamber, when exposed to the air. It was placed on the 10th of May in a cellar, where the experiment was to take place, and on the 14th it was decomposing. A second trial, which began on the 18th, ended in the same way on the 22nd.

M. Morot states that when meat is enclosed in a place subjected to a temperature of 32° to 30° Fahr., it can be preserved almost indefinitely. My own experience shows that a temperature of 23° to 21° Fahr. is necessary for indefinite preservation. Experiments made by myself in public markets show that frozen meat cannot be exposed continuously to the air for more than two days without danger of decomposition, especially when the temperature is high. (M. L. Villain in the *Recueil de Méd. Vét.*)

THE ROYAL COMMISSION ON THE SPREAD OF TUBERCULOSIS FROM ANIMALS.

AN important Royal Commission has just been appointed. Its object is to enquire into the administrative procedures available for controlling danger to man through the use as food of the meat or milk of tuberculous animals. The Commission will further consider what should be the proper action of the responsible authorities in condemning for the purposes of food supplies, animal carcases or meat exhibiting any stage of tuberculosis. The commissioners are as follows:—Sir Herbert Maxwell, Dr. Thorne Thorne, C.B., Mr. G. T. Brown, C.B., Mr. H. E. Claver, Mr. Shirley F. Murphy, Mr. John Speir, and Mr. T. C. Trench. Dr. T. M. Legge will act as Secretary to the Commission, the work of which from a sanitary point of view should be of the highest possible value to the community.

HONOURING PRINCIPAL WILLIAMS.

ON Monday night, 13th July, Principal Williams, of the New Veterinary College, Edinburgh, was entertained to a complimentary dinner in the Waterloo Rooms, on the eve of his setting out for Jamaica to investigate an obscure cattle disease which is at present causing terrible loss to the stock-owners in that island. Mr. Harry Thompson, M.R.C.V.S., Aspatria, presided, and Mr. Richard Rutherford, F.R.C.V.S., secretary to the Examining Board of the Royal College of Veterinary Surgeons, acted as croupier. After the dinner had been enjoyed, and the loyal toasts had been duly honoured, the CHAIRMAN said they had met to do honour to their esteemed friend before he set out on the important commission to which he had been appointed. For some time back a virulent disease, whose nature was unknown to the veterinary scientists on the other side of the Atlantic, had been ravaging the herds of Jamaica, and the Government of that island had applied to our Colonial Government to send out the ablest veterinary expert in Great Britain to make an exhaustive investigation of that disease, and the Colonial Government had selected Principal Williams to do this work. The Principal was setting out for Jamaica to-morrow (Tuesday), and they had met to do him honour before he should go.

Dr. JAMES HUNTER, Professor of Physiology, in proposing

the toast of the "Royal College of Veterinary Surgeons," criticised the action which the Council of that body had lately taken in regard to the educational question.

Mr. RUTHERFORD, in replying, also referred at length to the educational question.

Mr. D. YOUNG, *North British Agriculturist*, in proposing the "New Veterinary College," referred to the unique position which Principal Williams had won for himself as an author, a teacher, and a practitioner of veterinary science.

Professor BRADLEY responded.

Mr. F. G. D. GIBSON, Leith, in proposing the toast of the evening, "Success to Principal Williams," remarked on the great honour that the Colonial Government had done to Principal Williams by selecting him to conduct this investigation.

Principal WILLIAMS, in responding to the toast, which was enthusiastically received, said he highly appreciated the honour which the Colonial Government had done him, and he would devote himself heart and soul to the work they had entrusted him with.

Professor M'DOUGALL proposed the toast of the "Agricultural Interests," coupled with the name of Mr. T. M. Skirving, Niddrie Mains, whose burly form, he said, appeared a perfect object-lesson in depressed agriculture.

Mr. SKIRVING, in replying, said that when the farmers produced all the good things of this life for others, it was only right that they should secure a fair share of these good things for themselves. The past season had been the worst that he had ever experienced as a farmer, but this year they had the promise of excellent crops at any rate. Other toasts followed, and a very pleasant evening was spent.

EDINBURGH VETERINARY MEDICAL SOCIETY.

THE closing meeting, after a very successful session of the above Society, was held on Tuesday, the 30th June, 1896, at the New Veterinary College, Professor O. C. Bradley in the chair.

The annual reports of the retiring officers were read and confirmed. The election of officers for the ensuing session was then proceeded with.

Professor W. R. Davis was elected President, and Principal Williams, Professors W. O. Williams, J. Hunter, D. C. Longden, W. I. Macadam, O. C. Bradley, and R. Stewart

MacDougall, Dr. Thatcher, Mr. R. Rutherford, F.R.C.V.S., and Veterinary-Captain Appleton, vice-presidents; Mr. W. Hall Savage, secretary; Mr. A. M. Porteous, treasurer, and and Ed. Finucane, librarian.

A vote of thanks to the Chairman and retiring officers terminated the meeting.

M. E. WILLIAMS, *Hon. Sec.*

Cases.

GALL STONES AND CIRRHOSIS OF THE LIVER.

BY E. FAULKNER, M.R.C.V.S., KNOTT MILL, MANCHESTER.

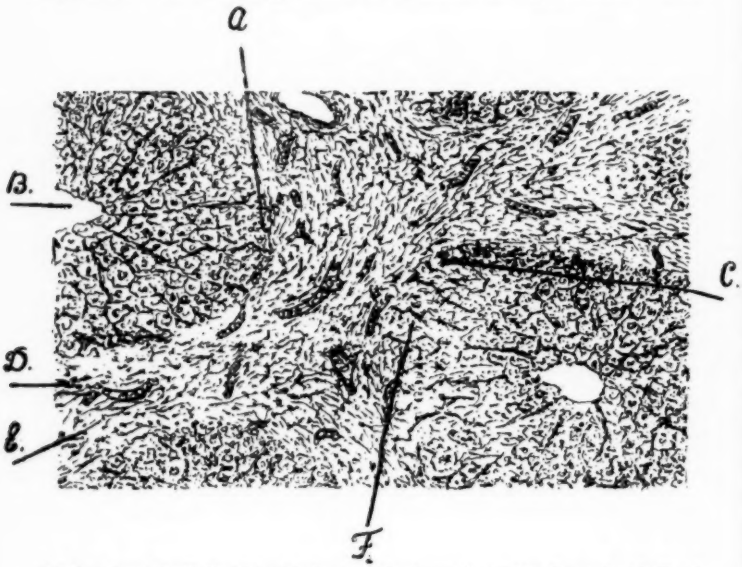
Subject.—A fairly well-bred bay harness mare, aged about 13 years.

History.—First came under our notice June 6th, 1896, being brought in by rail some 40 miles for advice and treatment, and no particulars of previous history obtainable.

Symptoms.—Pulse, temperature, and respiration normal; mucous membranes slightly hyperæmic, but not icteric, in poor condition, debilitated and wasting; coat puny and unthrifty, dull, heavy appearance; abdomen large and pendulous; cough short and weak; hind legs filled, particularly the near one; loss of appetite; stood persistently, only going down when she fell, and then up again directly; fæces and urine normal in appearance and quantity under the circumstances; no thirst or symptoms of diabetes. We were inclined to look upon the case as one justifying suspicions of tuberculosis or lymphadenoma, but for two or three circumstances, viz., the absence of pallidity of the visible mucous membranes, and no tendency to rest the head by the chin upon the manger or half door of the loose-box, and having no desire for food. Failing to diagnose the case satisfactorily, but being satisfied that there was progressive organic disease, and that the animal would do badly, we advised that she be destroyed. This was carried out on the 23rd inst., and the *post-mortem* made by myself on the 24th.

Post-mortem.—Apart from the condition of the liver and its contents, which weighed 72 lbs., with adhesion of the duodenum, in which was found a gall stone weighing 9½ ozs., there was nothing beyond general wasting of the tissues to be seen. No ascites whatever or effusion anywhere beyond that in the hind limbs, the enormous liver accounting for the large abdomen. The liver was pale (some portions being extremely so), firm and resilient, the borders well

marked and standing up boldly. On section, the organ cut with a creaking sound, the cut surface was anæmic and was crossed by innumerable bands paler than the general surface. Many dilated and thickened bile ducts were observed, and in them great numbers of calculi were found of larger or smaller size, the total number being 87! On examining fresh microscopic sections, the organ was found to be overrun with newly-formed connective tissue, the result of an indurative hepatitis. A drawing from a section is appended. The



(*a*) Fatty liver cells, (*b*) dilated intralobular vein, (*c*) columns of atrophied liver cells, (*d*) dilated capillaries, (*e*) new connective tissue between lobules, (*f*) embryonic tissue invading lobule.

figure shows the interlobular tissue at a part where there is no large vessel, and it is seen to be very greatly increased in thickness by the growth of embryonic connective tissue round the periphery of the lobules, some of which are also encroached upon unsymmetrically by ingrowths of the same tissue, with great loss of liver cells.

A few of the peripheral cells show fatty degeneration, but this change is not well marked.

Many engorged capillaries are seen ramifying in the new connective tissue.

The large calculus which was found in the dilated and greatly thickened bile-duct, where it opens into the duodenum, in spite of a good coating of gum and then one of varnish, crumbled to pieces. It was laminated, the colours varying from dark brown to olive-green.

Sticking in the centre of the mass after it had crumbled, a piece of blackthorn twig was found. It measured two and a-half inches and was pointed. It is probable that this has

Gall stone found at opening of bile duct into the duodenum, with enormous thickening, adhesion and ulceration.

been the cause of all the mischief. The sharp end of the twig has become engaged in the opening of the bile-duct, and there getting encrusted with bile constituents has blocked the lumen and given rise to the other deposits, to the thickening of the bile vessels in the liver, and to the indurative hepatitis with which the liver was affected. The absence of ascites is remarkable, but is only in accordance with what is usually observed. Probably no other animal but the horse could have such a liver without having a large quantity of fluid in the abdomen.

LARGE CYSTIC MYXOMA ATTACHED TO THE COLON OF THE SHEEP.

In the current number of *The Journal of Anatomy and Physiology*, Gordon Sharp, M.B., has a note on the above, which will, we think, be of interest to the veterinary practitioner. The tumour, we are told, was taken from a healthy animal, and did not constrict the lumen of the intestine in any way. Microscopically, it presented the usual myxomatous characteristic, and "was divided into spaces by a thin membrane containing round cells"; this fact, as the author points out, clearly indicates a relationship between myxomatous and sarcomatous new formations.

The following statement affords considerable food for reflection, even though we may not be able to agree with it in its entirety, or in all its suggestiveness; for this reason we quote at length. "The comparative pathology of new growths in the abdomen is interesting. Starting with the sheep, we have a fairly highly specialised animal in which myxomatous tumours are common. If we allow that the horse occupies a higher place, we have a different set of tumours of common occurrence, namely, the sarcomatous, melanotic sarcoma being largely found in that animal. Lastly, coming to man, the most highly specialised of all animals, we have, as the commonest abdominal new growths, the cancers, and differing much from both myxoma and sarcoma. The cancers are intimately associated with the bowel, and may kill by occluding the cavity, really starving the unhappy possessor. Their tendency is to kill their victims. Sarcomata, on the other hand, are not so closely connected with the bowel, being growths from the intestinal appendages, and although malignant, are not so fatal in their effects as the common growths found in the human subject. Lastly, the myxomata have no intimate connection with the bowel proper, being growths from the neighbouring embryonic tissue, and in their effects they are benign, causing inconvenience by their size rather than by constitutional disturbance. As one goes up the scale malignancy increases."

RUPTURE OF THE UTERUS DUE TO SERVICE.

BY R. C. ROBINSON, M.R.C.V.S., KIRKCUDBRIGHT.

On Friday, July 3rd, I was requested to attend a valuable pony brood mare, 12 years old. On my arrival at 7 a.m., I found her standing in a loose box. She seemed dull, but there were symptoms of acute pain.

History.—The mare had been served on the Wednesday evening. After service she was walked home, a distance of twelve miles, and put into a field. Nothing unusual was noticed till Thursday evening, when she appeared dull, and not inclined to feed. The groom had her brought into the house, as he thought she might have been injured during service, the horse being over 16 hands and she about 13 hands. As she remained easy, we were not sent for till the Friday morning, July 3rd, when she seemed to have intermittent attacks of colic, which only lasted a few minutes. The extremities and surface of the body were deathly cold. The visible mucous membranes were pale in colour. The eyes were amaurotic. Temperature 103·2 and respirations 16 per minute. Pulse very feeble, and running down in character. As the mare had passed no fæces through the night, rectal examination was resorted to. The rectum was found empty, but when the hand was withdrawn, it was covered with blood. An enema of warm water was given. It was soon returned, deeply coloured with blood. The urine was withdrawn by the catheter, and found to be normal.

Diagnosis.—Internal hæmorrhage, due to rupture of some blood vessel.

Treatment.—The following drench was administered:—

Tinct. opii	...	...	...	6 drams.
Ether meth.	...	...	...	1 oz.
Aqua	...	...	...	1 pt.

Instructions were left with the groom that the mare had to get gruel and milk, if she would drink them. If she showed signs of pain, they had to sew a blanket round her abdomen, and foment her for three hours. I also left a drench similar to the one administered, to be given when signs of pain appeared.

On my return at 3 p.m. I learned that the mare had remained easy, and that she had passed fæces and urine. Pulse 72 per minute, and better in tone. Temperature 102·2. The surface of the body and extremities were of a natural temperature. As the mare seemed inclined to eat, bran mashes were ordered in small quantities. The same instructions were given to the groom regarding treatment.

July 4th, 9 a.m. The mare had remained easy all night, her condition being the same as the previous afternoon.

The following drench was administered:—

Liq. ammon. acet. fort.	...	...	...	1½ ozs.
Ether meth.	...	...	...	1 oz.
Aqua	...	...	...	1 pt.

A similar drench was left to be given at 1 p.m. Returning at 4 p.m., I found the mare in the same condition as in the morning, but there had been no passage of fæces.

On examination a small quantity of fæces were found in the rectum. This was removed, and an enema of warm water administered.

July 5th, 9 a.m.—Mare uneasy. Respirations 24 per minute, and thoracic. Pulse imperceptible, and a cold

perspiration bedewed the surface of the body. There was no inclination to lie down. I administered the following drench, and left a similar one to be given in three hours if the pain continued :—

Tinct. opii.	...	...	...	6 drams.
Ether meth.	...	...	...	1 oz.
Aqua	...	...	...	1 pt.

I remained an hour with the mare to see if the drench had

the desired effect, and during this time there was no recurrence of pain. Instructions were left that if the pain recurred, fomentation had to be applied to the abdomen. 3 p.m.: A messenger arrived to say the mare was much worse. On my arrival I learned that she became violently pained at mid-day, continually lying down and getting up, and that they had fomented her throughout the three hours. I had the sheets removed and the body rubbed dry. Then I applied a weak stimulating liniment to the sides to prevent a chill, and had the body warmly but not too heavily clothed. The legs were also rubbed dry and bandaged. Two grains of morphine were administered hypodermically. This seemed to give relief for about an hour, then the mare presented a peculiar symptom, viz., continual backing round the box, which lasted till death occurred at 6.30 p.m.

Autopsy.—On opening into the abdominal cavity, a large quantity of fluid escaped which was tinged with blood. The peritoneum was intensely thickened and much inflamed. The large and small intestines were congested. There was a rupture about three inches long in the body of the uterus. The edges of the wound were thickened and inflamed. The bladder and all the thoracic viscera were healthy.

Remarks.—In calling attention to this case I feel impelled to point out the folly and danger of indiscriminate service. The advantages to be gained by such a course are bought dearly. The risks are too great, and although hundreds of cases occur in which the dangers are obviated, this exception shows the gravity of the risk. In no literature at my command have I been able to discover any account of a case parallel with the present. The case appears to be unique, and may be of interest to others besides myself.

Editorial.

FIDELITY—OR OBSTINACY?

On the eve of my departure for the West Indies I felt it incumbent on me to offer a final criticism on the latest decision of the Royal College. What will occur before my return it would be rash to prophesy; one cannot tell what a day may bring forth, and one must therefore be content to live, as it were, from hand to mouth.

It is very curious to observe how nearly the Royal College approaches wise decisions and with what perverse ingenuity

it manages to avoid them. Having seen the futility of the new-born craze for undivided certificates, and having been cruelly abandoned and left in the lurch by the General Medical Council, the Royal College was about to make an honourable retreat and save its reputation for wisdom and common sense by adopting the simple course of accepting any certificate that would enable a young man to register as a medical student. Professor Edgar's motion ran thus: "Students who enter the veterinary schools shall, prior to their first examination by the R.C.V.S., produce a certificate entitling the holder to be registered as a medical student." Nothing could be simpler or more intelligible. The settlement of the educational question was to be left to the approved educational authorities. The list of these authorities can be obtained anywhere: their regulations are plain and definite. Everybody is satisfied as to the ability of these bodies to examine candidates in such a way as to exclude no young man likely to make a good student, or to include any likely to be a drag on the classes or a discredit to his profession; furthermore we are all satisfied as to the integrity and honour of these bodies. By following the lead of the medical profession we should have got rid of all the vexed questions that have rent our councils asunder lately and caused unspeakable bitterness in our debates; we should have relieved ourselves and our secretaries from delicate and invidious tasks in the way of examining certificates; our trumpets would have given forth no uncertain sound to those preparing for the battle of life; and finally we should have lost no honour or glory by following the banner of the medicals—our elder brethren. All this, however, was not to be. Jealousy and perversity raised their ugly heads and gnashed their formidable teeth. Professor Dewar cannot understand why we should adopt the medical systems—even, I presume, when they are good? Could anything be more futile? If the medicals invent or elaborate a scheme of examination, let us lay aside all silly prejudice and view that scheme dispassionately; if it proves good and workable, let us adopt it thankfully and be glad that we have received gratuitous help; if, on the other hand, it turns out on examination to be faulty, let us reject it and excogitate something better, which the medicals may in their turn some day adopt from us. But let the criterion be the suitability of the scheme for its purpose, not the fact that it emanates from veterinary or from medical brains. Besides, how ridiculous it is, how hopelessly absurd for us to pose as the superiors of the medical pro-

fession. Let us rather do all we can, whilst maintaining our independence, to show that we will loyally and faithfully follow those in the medical body who can show that they are born leaders of men, in the expectation that they will acknowledge us their colleagues and equals when occasion arises.

Captain Butler seems to be actuated by the same spirit that torments Professor Dewar. He proposed to add to Professor Edgar's motion the words "in 1895." This apparently simple addition assumes, when closely examined, quite a cabalistic significance. It means that these two gentlemen have detected and are resolved to expose the unclean thing. They are determined to prove to their backsliding brethren, veterinary and medical, that they at least have not bowed the knee to Baal. They know that the General Medical Council have recently made some relaxations in their rules and no longer reprobate that dreadful monstrosity the divided certificate; to them this horror recalls Satan with his divided hoof, and they are quite naturally afraid. Therefore they would return to the comparative purity of the year 1895 before these heresies were thought of. How they were going to work out their plan I don't pretend to know. How the poor student was to eliminate the heretical element from the regulations of 1896 so as to arrive at the pure doctrine of 1895 I cannot tell. Of course he might have been able to get hold of a copy of the old regulations by a lucky chance, or perhaps Professor Dewar and Captain Butler might have restored the ancient codex, but this is all in obscurity. How also the educational bodies were to act I don't quite see: were they to separate our few sheep, at enormous trouble, from the medical goats? or was the purgation to be performed by our secretaries?

Wiser counsels prevailed in the end. The date was advanced to 30th June, 1896, so as to include the recent relaxations of the General Medical Council, but here a firm stand was made. There is to be no more paltering with heresy, not one concession—farther—is to be made to Baal. Let the General Medical Council beware! The eyes of the whole veterinary world are upon it, and its every movement is being watched. If it yield but an inch farther there will be a violent schism in the scientific world. The medical profession may go to perdition if it likes, and welcome, but the veterinary surgeons of the country will not be associated with the wicked in their downfall. They will hoist the standard of integrity and this standard shall be the

undivided—or rather we should say the ever-so-little-divided—certificate. *Nous verrons.*

Just one point more. Why not make it imperative that the veterinary student shall produce his educational certificate *before entering the veterinary school?* This would save much wrangling and much heart-burning and give the student a feeling of security which would conduce greatly to the success of his professional studies. Why also should we not, like the medicals, have a Registration Roll in which the names of all students shall be inscribed? The expense might quite well be covered by an entrance fee. *Valete.*

THE SUMMER SESSION.

THE renewal of the summer session in the veterinary colleges of Great Britain, a measure emanating from the Camden Town Institution, has caused great dissatisfaction to students, parents, the majority of the teachers, and to practitioners. From every point of view it is, in my opinion (and it will be granted that I am well qualified to judge of the merits and demerits of the question), a sad blunder. Some years ago a law regulating the practical education of the student before admission to a college—in other words, "the pupilage clause"—was strenuously advocated by many as an absolute necessity in the education of an aspirant to the ranks of the veterinary profession—and not without a very good show of reason. This idea was not accepted, as it was thought to be a case of "putting the cart before the horse," but the object aimed at, viz., to give students an opportunity of acquiring practical knowledge, was effected by the abolition of the summer session that was then existent. Our governing body by one fell stroke has now decreed, by its renewal, that the opportunity of getting practical experience, a desideratum so eminently important in the veterinary profession, is to be interfered with, an interference most injurious to the student. What is supposed to be gained by this summer session? It cannot be an improved education, as in the month of March, when the student of any of the four years constituting the curriculum is in the midst of his studies, he, through this absurd system, has a check put on them, and is given a holiday of several weeks—a time insufficient for him to settle down into practice, and unsatisfactory to the practitioner who may desire to utilise his services.

Were the winter session, on the other hand, to be continued

until May without any break, excepting the Christmas holidays, the advantages are so obvious that they need hardly be detailed. The important fact that the student would thus complete his compulsory thirty weeks of study, instead of taking forty weeks to do so, as at present, must not be overlooked; and how much more satisfactory to parents and practitioners, and beneficial to himself it would be, that the student could then, for a period of five months uninterruptedly, devote his whole time to practice? As things are, many dally about town from March till May, others return to their homes, and in very few instances are any benefited by their compulsory rest. As a teacher I declare emphatically that far better would it have been for them had their studies not been broken in upon, to be recommenced again at the summer session. In point of fact the summer session is attended with loss, and no gain, in any sense of the word, to the veterinary student. Should the needless expense it causes through the prolongation of the period of study not be considered? What possible advantage can be claimed for it? Can it be that of enabling rejected students, and those who have not gone forward when eligible, to pass, if possible, at the March examinations, these being the classes who then present themselves?

Should the desirable, continuous, and steady process of tuition be invaded for this paltry reason? As regards the examinations, I contend that those held at May and Christmas only for *all* classes of veterinary students would fully suffice to test their fitness to practise veterinary science. I look upon these March examinations as being superfluous, as a fifth wheel to a coach, besides being productive of great expense and inconvenience occasioned to examiners assembling from all parts of the kingdom. Surely our students of the present day have obstacles huge enough to surmount before they can obtain the jealously-guarded diploma of the R.C.V.S., without this vexatious and mischievous additional burden being placed on their backs. I hope, therefore, that our Council will not fail to look into this matter, as it is creating complaints loud and long. The interests of the profession at large, as well as of those more immediately concerned—the students and teachers—demand the abrogation of a retrograde and objectionable measure passed in Council in much too hurried a manner, and without due consideration of the obnoxious consequences likely to result, and that have resulted, from its re-introduction and observance.

Proceedings of the Royal College of Veterinary Surgeons and Veterinary Medical Societies, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS.

Special Meeting.

AT the conclusion of the quarterly meeting on the 3rd July, a special meeting of Council was held, R. C. Trigger, Esq., President, in the chair. The first business was the resumed consideration of the following motion by Professor Edgar—"Students who enter the veterinary schools shall, prior to their first professional examination by the R.C.V.S., produce a certificate entitling the holder to be registered as a medical student."

Veterinary-Captain BUTLER: I move as an amendment that after the word "student," the words "in 1895" be added.

Mr. ABSON seconded the amendment.

Professor MCFADYEAN: It would be better to mention the date in 1895, and I would suggest the 1st January.

Mr. SIMPSON: Is it a fact that there have been alterations with regard to the acceptance of certificates by the General Medical Council?

The PRESIDENT: The alterations do not affect us in the slightest.

Mr. ABSON: I think there has been some alteration, and what is the reason that Captain Butler has added the words "in 1895."

Professor DEWAR: Seeing the view the Council has taken to-day with regard to divided certificates, I think there is no necessity for passing the motion in the form in which it now stands. I shall move its direct rejection. The examinations as altered by the General Medical Council at their recent sitting on June 22nd, are far better, as far as we are concerned, than the regulations were before. The examining bodies mentioned in the first schedule as they are given in our Register here, the certificates of which are to be accepted as qualifying for the final examination, are nearly all included in the new one, but there are some few alterations, and two are added. There are now 52 examining bodies whose certificates are mentioned in the regulations of the General Medical Council, which are to be accepted. Only 14 of these bodies require the subjects to be passed all at one time, and the University of Edinburgh, who reject a considerable number of these certificates that we have enumerated in our Register, mentions in their regulations, which were only printed this week, that a candidate can pass, not only with a divided certificate, but a certificate granted by two separate bodies. The preliminary examination in arts and science can be passed at two separate times. If we are going to accept anything at all, I should much prefer that we should accept the regulations of the General Medical Council as amended last month, but I should much prefer that we did not accept them at all. We certainly have not received so much assistance and encouragement from the medical profession that we should follow their lead in everything. Surely the veterinary profession has arrived at a time when it is fit to draw up a list of the examining bodies whose certificates it shall accept, and leave the General Medical Council out of the question.

Veterinary-Captain BUTLER: I am willing to accept the date proposed by Professor Dewar, and put in any date which will carry out my point. In order to fix our examination where we have got it, I propose to put in a date, so that our examination may not blindly follow the General Medical Council. I take it that the reason that it was proposed to accept the examination as laid down by the General Medical Council was that in the examinations accepted by them we have already made for us a good rule to go by.

Mr. BARRETT: It seems to me that it would be desirable to appoint a sub-committee to consider bye-law 52 and amend it as may be requisite.

The PRESIDENT: You must give notice of that.

Mr. BARRETT: Do you rule that I cannot amend Professor Edgar's motion?

The PRESIDENT: You must give notice to amend a bye-law.

Mr. BARRETT: I am speaking of Professor Edgar's motion.

The PRESIDENT: What you propose is an adjournment of this debate.

Mr. BARRETT: Should I be in order if I asked the Council to accept an amendment of this kind—"That a special committee be appointed to consider and amend bye-law 52, with instructions that the standard of education be on an equality with that of the General Medical Council"? Is that in order?

The PRESIDENT: That simply means the adjournment of this debate.

Mr. BARRETT: No, sir; it is a motion to amend a bye-law moved by Professor Edgar.

The PRESIDENT: What you want to do is to form a committee to consider this very question now before the Council.

Mr. BARRETT: I ask the Council to vote for the formation of a committee and thereafter to appoint a committee, as was done in the case of Professor Penberthy's motion.

The PRESIDENT: It is not an amendment at all.

Mr. BARRETT: I submit that it is an amendment to Professor Edgar's motion, and that it is in order, inasmuch as he has given notice of his motion.

The PRESIDENT: I do not rule it out of order. I say it is not an amendment.

Mr. BARRETT: I do not care what you call it if you will submit it to the Council.

Mr. HARTLEY: I fail to see the use of appointing another committee. We have the whole Council here, and what better committee could we have?

The PRESIDENT: Mr. Barrett's proposition has not been seconded.

Mr. BARRETT; Do you rule that I cannot proceed?

The PRESIDENT: No.

Mr. BARRETT: I must ask you to consider my amendment.

Professor MCFADYEAN: I rise to a point of order. I submit that this is not an amendment. Mr. Barrett proposes an illegality. A committee cannot alter a bye-law. It the first place, it is an illegal action, and in the second, it is not an amendment.

Mr BARRETT: In that case I submit that Captain Butler cannot alter the bye-law. If he can, I can; if he cannot, I cannot.

The PRESIDENT: Captain Butler is more clearly defining Professor Edgar's motion.

Mr. BARRETT: He has added to it.

The PRESIDENT: No, he is more clearly defining it.

Professor MCFADYEAN: He is not cutting against the exact principle of the original motion.

The PRESIDENT: This is my view. You have a perfect right to move your committee; but you would be out of order to ask the committee to alter a bye-law.

Mr. BARRETT: I bow with every possible respect to your ruling, sir, but I respectfully submit that if I am not allowed to alter Professor Edgar's motion, Captain Butler on his part ought not to be allowed to do so. That is my point. I bow, however, unreservedly to your decision.

The PRESIDENT: It seems to me that you want a committee to alter a bye-law.

Mr. BARRETT: No; I am asking for a committee to discuss Professor Edgar's motion, and bring it before the Council.

The PRESIDENT: You are quite in order there.

Mr. BARRETT: Then I make that suggestion. I will move—"That a committee be appointed to consider bye-law 52 and report to the Council thereon."

The PRESIDENT: That is quite in order.

Mr. BARRETT: I move this, gentlemen, because the profession has clearly and unmistakably said that it does require our examination to be on an equality with that of the General Medical Council. I think it would be wise of us to elect a committee of gentlemen who understood this question to consider the matter and report to us at our next meeting when the whole matter can be discussed. I think it would be a mistake if we hurriedly voted on Professor Edgar's motion to-day. We have been engaged here for several hours, and I think we might reasonably defer the matter. I look at the facts in the face, and I think it is the feeling of the Council that it should give effect to the wishes of the profession. It is an important matter, and one that must have full disnussion. I ask you to delegate the matter to a small committee.

Mr. SIMPSON: I will second that proposition for the purpose of enabling me to say what I am about to say. I certainly am in favour of Mr. Barrett's amendment, and I recognise with him that the profession has spoken very clearly upon the point.

Vet.-Captain BUTLER: Mr. Barrett has not moved an amendment. He has proposed a new motion, which has nothing to do with this discussion at all.

Mr. SIMPSON: I am very sorry if I have misunderstood what has taken place. I thought the President had accepted it as an amendment.

Mr. BARRETT: I think if I moved the adjournment of the debate we could consider the question afterwards.

The PRESIDENT: Do you accept that?

Mr. SIMPSON: No, sir. I think it is quite possible to take this up to-day. I understood from the gentlemen at the other end of the room that if this was passed it would not in any way interfere with bye-law 52. I maintain that bye-law 52 has been the stumbling-block throughout. No one has been able to understand it, and I thought by passing Professor Edgar's resolution it would clear away all doubt and difficulty. We should then know, and everybody else would know, what the intention of the Council is. I am exceedingly sorry if this is not intended to be a substitution for bye-law 52.

Professor McFADYEAN: Who said it was not?

Mr. SIMPSON: If you ask me to name the person, it was you.

Professor McFADYEAN: I deny the imputation.

Mr. SIMPSON: Naturally!

Professor McFADYEAN: What I said was it would make no alteration in our practice. I maintain that it merely interprets for the benefit of doubtful members like Mr. Simpson the real meaning of bye-law 52.

Mr. SIMPSON: I ask you, Mr. President, to say whether if this is passed bye-law 52 remains?

Professor McFADYEAN: No.

Mr. SIMPSON: Then I am satisfied.

Mr. BARRETT: It says on the agenda paper, "To pass the following notice of motion."

Mr. THATCHER: It is an alteration of bye-law 52.

The PRESIDENT: All we have before us now is Professor Edgar's motion and Captain Butler's amendment.

Mr. BARRETT: It is an amendment to the bye-law, and I understand you to rule that out of order.

The PRESIDENT: It is simply adding to the motion.

Mr. THATCHER: Captain Butler is simply making it more plain by defining the date.

Professor WILLIAMS: With all deference to Mr. Thatcher, Captain Butler's motion is entirely different from that of Professor Edgar's. He wants to add "the 1st of January, 1895," I believe. That is not the certificate of the

General Medical Council at this date. Therefore I say it makes a wonderful difference.

The PRESIDENT: I will now ask you to vote for Captain Butler's amendment.

Professor WILLIAMS: Will you please read it again?

The PRESIDENT: The amendment as it at present stands is as follows:—"Students who enter the veterinary schools shall, prior to their first professional examination by the Royal College of Veterinary Surgeons, produce a certificate entitling the holder to be registered as a medical student on June 30th, 1896."

This amendment was then put to the Council and carried, 12 voting for and 5 against.

Professor WILLIAMS: I maintain that this is entirely out of order. It is perfectly illegal. There is no notice of this kind upon the agenda paper. I enter my protest against it. It is entirely illegal.

The PRESIDENT: I now put the amendment which has just been passed as a substantive resolution.

The motion was agreed to.

Motion by Professor Shave.

Professor SHAVE: My notice of motion is, "That stable management be struck out of the second or B examination." I do not wish it to be thought that it is my idea in any way to under-estimate the value of stable management to the veterinary student, because I think it must be plain to everyone that as stable management is to form the life work of the veterinary surgeon, it is necessary for the student to begin and end with stable management, so far as his curriculum is concerned. I think it neither necessary or expedient that the examination in stable management should be at the second examination. By this time the student, if he has been at the College for two years, cannot have attained any considerable degree of efficiency in it, consequently the examination must be of a very elementary nature. I maintain that is what it is, and that it is not worth the money that it costs. If you will consider that stable management as now constituted costs one-third of the Class B examination, and that the student will be again examined in stable management practically at the third examination in the subject which is now called hygiene, and that he will be examined at his fourth examination in stable management, inasmuch as he will get it in his clinical medicine and clinical surgery, I think you will agree with me that there is no necessity to mix up the subject of stable management with those of anatomy and physiology. I do not say that I think the subject should not be taught in the schools in an elementary way, but I do not think that, considering the financial condition of the College, we are entitled to spend very much money to examine these men three times over. We examine them in stable management at all the examinations except the first. No doubt it is right in a way, but is it worth the money that it costs to give these men a most rudimentary examination in stable management?

Mr. SIMPSON: I shall have much pleasure in seconding Professor Shave's proposition if you will allow me to add to it, "And that it be added to class C, hygiene." As it stands now it is simply wiped out of the schedule altogether. If you will allow Professor Shave to amend his proposition, so that it reads "and be transferred to class C," then I shall have pleasure in seconding it.

The PRESIDENT: That is a substantial amendment; it is out of order.

Mr. SIMPSON: Then I cannot second it in its present form, because it means wiping out stable management altogether.

Professor SHAVE: Perhaps I did not make it quite clear that this stable management is really included in hygiene. What is hygiene, so far as the

veterinary surgeon is concerned, if it is not the management of animals in health? They get their management in disease when they come to the fourth examination.

Professor WILLIAMS: If no one will second Professor Shave's motion, I will do so. I wish to point out that these two examinations—veterinary hygiene and dietetics in the C examination, stable management, and so on, in the B examination—are what they call in Yorkshire, "Pig upon pork, and pork upon bacon." I pointed out that it is the same thing. Here you have handling animals, special parts, use of twitches, muzzles, rings, clothing, bandaging, clipping, singeing, halters, pillar-reins, and so on. Then we come to class C—stables, cowsheds, etc., construction, aspect, feeding, grooming horses, milking cows, washing sheep and dogs, and dipping. I want to know the difference between the two examinations. I think it is an absurdity to have two examination on a subject like this, and I have great pleasure in seconding Professor Shave's motion.

Professor MCFADYEAN: I rise to support the motion. I am sorry that you have declined, sir, to accept the amendment which Mr. Simpson was anxious to propose, but, nevertheless, I shall vote for the motion. In the event of the motion being carried to-day, I shall take the earliest opportunity of moving that the subjects at present included under the head of stable management shall be put under the head of veterinary hygiene. I have heard some mutterings round the table about "the thin end of the wedge," and "breaking up the four years' curriculum." So far as I am concerned I entirely repudiate the suggestion that I want to break up the scheme of the four years' course, or that I wish to make the examination on these subjects one bit easier. I simply desire to endorse what Professor Shave has said. At the present time there is a distinct overlapping of the examination, which, I should say, must at least cost £50 a year. Apart altogether from the fact that £50 a year is of special value to the Council at present, I think there is no reason for giving this subject the dignity of two special examiners.

Mr. MULVEY: When this subject was put into the curriculum it was done on account of the complaint that this Council had received over and over again reports of the utter ignorance of anything connected with the stable or its management on the part of the students who were sent out. It was done on those grounds alone, and it was thought that class B being the lightest of any, it was better to put it there. Professor McFadyean has said that these subjects—hygiene and stable management—overlap. Now, the examination in stable management is purely a practical one in the stable, while that of hygiene is a written examination, and an oral examination at a table—vastly different, I take it. I trust this Council will not allow this subject to be eliminated from the position which it now occupies.

Professor PENBERTHY: I rise to do all I can to oppose the removal of this examination from the earliest possible part of the studies. Manipulative dexterity can only be gained by practical experience, association with animals, and I hold that this Council has no other means of enforcing students to associate with animals except by placing an examination before them. This examination was arranged for class B, because we could not arrange it very well for class A. I believe I am right in saying that the general feeling of the Council was that we should use the means at our disposal at the earliest feasible opportunity. Class A was crammed full; class B was judged by the Council, rightly or wrongly, to afford the earliest opportunity for the Council's demands, and I still hold that it is the only way in which the Council can secure students being brought into direct association with the matters in connection with which they are going to spend their lives afterwards. I hold that this examination in class B is the one means the Council of the R.C.V.S. have for preventing all the fault-finding we have heard about non-practical

men, unfamiliarity with animals, and young veterinary surgeons being held up to ridicule. If the Council does not adopt some such measure, I feel that it will not be doing its duty. Rather would I see some other part transferred, if the examination is excessive, because there is a means of distinguishing between stable management and hygiene. In my mind, if there is not, there is a possibility of dividing hygiene into two parts, and putting one part into one place, and another part in another. I simply speak as a member of this Council, guarding the entrance into the profession in opposing the motion of Professor Shave, and I hope sincerely the Council will not make a move in this direction.

Vet.-Colonel LAMBERT: I cordially endorse what Professor Penberthy and Mr. Mulvey have said on this subject. The great fault of the veterinary profession in the opinion of the public is its want of practical knowledge. Especially do we find that with young members coming into the Army. They know very little of this subject. I myself think that there is nothing more important than a thorough knowledge of stable management, and I think the student cannot begin too young. I should like to see him taught it from his entry into college. It must strike the public as very odd if they see a young student who has been over a year at the college, who does not know how a horse should be fed, and the place ventilated. I trust the Council will not adopt Professor Shave's resolution.

Mr. FAULKNER: My views are somewhat on the lines of those expressed by Col. Lambert and Professor Penberthy. This scheme so far as it has been set forth has, as it were, only been on its trial for five minutes, and it is very early indeed to want to upset it. So far as we general practitioners are concerned, our idea is that the young man would be all the better for possessing the knowledge before he goes to college. The cause of trouble to many practitioners when they start on their own account in the country is that they have not that special knowledge which prevents them from getting into trouble. With regard to overlapping, there is more or less of it throughout the whole course. I would ask that the scheme should have a further trial before we begin to try to upset it and knock it to pieces.

Mr. WARTNABY: I must confess ignorance to a certain extent on this question for I do not quite know what is included in stable management. If it includes the knowledge that a student ought to have in going about a horse, or about his patients generally, and the little ins and outs of stable management, I should very strongly object to its being shelved. I have seen a little of these new men who have come down and do not know how to go about a horse. There is nothing so damaging to a young man in his future life, or a matter so soon spotted by farmers as when a man goes about his horses like a tailor. In addition to that it is a reflecrion on the teacher and examiner when a student is sent down in that state. It brings ridicule indirectly upon the profession generally to turn such men loose on the public.

Mr. SIMPSON: I should like to make a final appeal to Professar Shave to withdraw his motion and to allow it to come on as a suspended notice of motion of this kind, "That stable management be struck out of the second or B examination and be added to the third or C examination in veterinary hygiene and dietetics." I will ask Professor Shave whether he sees his way to withdraw his motion and suspend this for three months. If so, I and others can see our way to support it. If this resolution is carried to-day stable management is lost to you, and if you once lose it I doubt very much whether you will get it reinstated anywhere. Added to that you must bear in mind that you have already engaged your examiners; every arrangement has been made for them to hold their examination in this particular subject, and there are many reasons why it should not be lost.

Professor SHAVE: Can I withdraw?
The PRESIDENT: Yes.
The motion was accordingly withdrawn.
On the motion of Professor PENBERTHY, seconded by Mr. FAULKNER, a vote of thanks to the President for his conduct in the chair was carried by acclamation, and the meeting terminated.

The Examinations in London.

The Written Examination was held on Friday, July 10th, at the Examination Hall of the Incorporated Law Society, Chancery Lane, W.C.; the Oral Examinations at meetings of the Board of Examiners on and between July 21st and 25th inclusive, at 10 Red Lion Square and the Royal Veterinary College. The following students passed their Final Examination and were admitted members of the Royal College of Veterinary Surgeons:—

Mr. W. C. Prudames
„ R. P. Thomas
„ A. E. Payne
„ P. J. Hagmaier
„ E. B. Bartlett
„ J. S. Pike
„ C. H. Spurgeon
„ J. H. Burnet
„ F. T. Barton
„ W. J. Browning
Mr. H. B. Eve
„ R. Gilby
„ P. S. Howard
„ F. G. Liddle
„ A. Maynard
„ W. C. Stanley
„ F. T. Trewin
„ T. A. Verney
„ W. Wordley
„ C. E. Wells

The following students passed their Third Examination under the four-years' course:—

Mr. S. T. Amos
„ J. B. Collier
„ P. M. Evershed
„ H. Gillard
„ F. Harber
„ A. J. Hines
* „ R. W. Hall
„ W. H. Hirst
„ G. H. Kitchen
„ P. Lloyd
Mr. A. Miller
„ F. Crowhurst
„ A. Olver
„ C. E. Perry
„ W. G. Taylor
* „ J. F. Thurston
„ F. J. Walder
* „ S. B. Woolatt
„ B. E. Wooster
„ R. B. Wood

The following students passed their Second Examination:

Mr. S. G. Chellew
„ R. S. Collihole
„ J. F. Jewell
* „ C. W. Abrams
„ O. S. Fisher
„ H. Gamble
„ E. Peacey
† „ C. Radway
„ P. W. Smith
„ T. J. Symes
Mr. C. M. Sharpe
* „ P. J. Simpson
† „ E. E. Bath
„ D. Crole
* „ A. H. Corry
„ D. Chalmers
„ W. Cranston
† „ T. Wolsey
* „ A. Whicher
* „ W. R. Williams

* Mr. H. A. Woodruff.

Marked thus * passed with 2nd Class Honours.
„ „ † „ 1st „

The following students passed their First Examination :—

†Mr. H. G. Allen
* „ A. N. Brodie
* „ H. Burrell
„ F. W. Cousens
* „ C. H. Coombe
„ J. Cane
„ C. R. Copp
„ T. Haigh
„ H. H. Jeffries
„ G. T. Jackson
„ B. L. Lake
† „ W. Lawson

*Mr. G. Lockwood
„ J. Lee
* „ J. C. Munby
„ W. R. Neale
„ A. L. Purdy
„ C. E. Rix
* „ C. Roberts
„ D. H. Rait
* „ E. L. Siddall
* „ J. M. Tate
* „ J. J. B. Tapley
† „ G. H. Woodridge

Marked thus * passed with 2nd Class Honours.
„ „ † „ 1st „

ARTHUR W. HILL, *Secretary*

GLASGOW VETERINARY COLLEGE.

THE examination of the R.C.V.S. took place in the Glasgow Veterinary College, Buccleuch Street, on Tuesday, Wednesday, Thursday, Friday, and Saturday, July 14th—18th. The Board of Examiners included Messrs. Geo. Fleming, LL.D., F.R.C.V.S.; James Clark, F.R.C.V.S.; W. B. Walters, F.R.C.V.S.; J. R. Green, Sc. D., F.R.S.; W. H. Bloye, F.R.C.V.S.; Fred. Smith, F.R.C.V.S.; John Malcolm, F.R.C.V.S.; Finlay Dun, F.R.C.V.S.; John Berry Haycraft, M.D.; W. Peacock, F.R.C.V.S., M.D., M.R.C.S., L.R.C.P.; Harry Olver, F.R.C.V.S.; G. Sims Woodhead, M.D.; Sheridan Delepine, M.B.Sc.; W. Duguid, F.R.C.V.S.; J. R. Cox, F.R.C.V.S.; J. B. Westonholme, F.R.C.V.S.; W. Woods, F.R.C.V.S.; H. Somerville, B.Sc.; J. H. Munro, D.Sc.; and Sidney Villiers, F.R.C.V.S. There were also present as *ex-officio* members:—Principal M'Call, F.R.C.V.S.; Professors W. Limont, M.A., M.B.; J. M'Intosh M'Call, M.B., C.M., M.R.C.V.S.; J. Wilson Cameron, M.B., C.M., D.P.H.; J. Murphy, F.Z.S.; T. S. Goodwin, F.C.S.; Thos. King; John Brown, M.R.C.V.S., F.H.A.S.; and Robert Dobbie, Secretary.

The following students passed the A or first professional examination :—A. Robb, Glasgow; W. Watson, Pontypass, Armagh; Geo. H. Barber, Holmfirth, Yorkshire; J. J. Aitken, Kingstown, Dublin; W. Gardiner, Helensburgh; D. M'Hattie, Glasgow; R. Livingstone, Rothesay; J. A. Montgomery, Rothesay; T. C. R. Boleyn, Willington, Durham.

The following students passed the B or second professional examination :—Harry Oliver, Birmingham (2d honours); R. G. Jones, Newmarket; Charles W. Mackay, Greenock (2d honours); J. T. Shannon, Lexington, Kentucky (2d honours); J. Stevenson, Dumbarton; D. Weir, Milngavie (2d honours).

The following students passed the C or third professional (four years' course) examination :—Messrs. J. Marshall, Torrance of Campsie; J. M'Eachran, Campbeltown; J. Donaldson, Largs; J. R. M'Call, Blairtummock, Baillieston; R. G. Anderson, Glasgow; T. Rennie, Ayr.

The following students passed the first (or theoretical) part of the final examination :—W. Blane, Belturbit, County Cavan; D. M'Geoch, Paisley;

R. Mitchell, Glasgow; T. G. Palgrave, London; J. A. Todd, Brighton; R. Miller, Strathaven; J. M'Neill, Greenock; J. Laird, Coatbridge.

The following gentlemen passed the second (or practical) part of the final examination and received the diplomas of the Royal College of Veterinary Surgeons:—Messrs. R. Mitchell, Glasgow; J. A. Todd, Brighton; R. Miller, Strathaven; J. M'Neil, Greenock; L. H. Macqueen, Cardonald.

Medals granted by the Highland and Agricultural Society of Scotland, the late Professor Allen Thomson, of London: and Principal M'Call, and certificates of merits were awarded in the different branches of study as follows:—

Medicine and Surgery (*Horse*), written examination—Silver medal, John M'Neil; 1st class certificates, H. G. Simpson, Robt. Miller, T. G. Palgrave; 2nd class certificates, J. A. Todd, W. T. Blane, Hugh Ferrier.

Medicine and Surgery (*Cattle*), written examination—Silver medal, John M'Neil; 1st class certificates, H. G. Simpson, T. G. Palgrave, J. R. M'Call; 2nd class certificates, R. Miller, J. A. Tood, W. T. Blane.

Materia Medica, written examination—Silver medal, James Donaldson; 1st class certificates, J. M'Eachran, J. R. M'Call; 2nd class certificates, R. G. Anderson, John Marshall, T. G. Palgrave.

Pathology and Bacteriology—Silver medal, John M'Neil; 1st class certificates, John R. M'Call, James Donaldson; 2nd class certificates, T. G. Palgrave, R. G. Anderson.

Veterinary Hygiene and Dietetics—Silver medal, J. R. M'Call; 1st class certificate, John Marshall; 2nd class certificates, John M'Eachran, T. Rennie.

Parasitology—Silver medal, John M'Neil; 1st class certificates, T. G. Palgrave, R. Miller, H. G. Simpson.

Senior Anatomy—Silver medal, C. W. M'Kay; 1st class certificates, R. G. Jones, H. Oliver; 2nd class certificates, J. Stevenson, D. S. Weir.

Physiology—Silver medal, H. Oliver: 1st class certificates, C. W. McKay, R. G. Jones; 2nd class certificates, J. M'Leod, J. Stevenson.

Stable Management—H. Oliver.

Junior Anatomy—Silver medal, Charles Bell; 1st class certificates, W. Gardner, A. Robb, G. H. Barber i 2nd class certificate, W. Watson.

Chemistry—Silver medal, W. Watson; 1st class certificates, W. Watson, A. Robb; 2nd class certificates, D. M'Hattie, G. H. Barber,

Botany—Silver medal, W. Watson; 1st class certificates, R. Livingstone, A. Robb, D. M'Hattie; 2nd class certificates, J. Montgomerie, J. Aitken, G. H. Barber.

Zoology—Silver medal, W. Watson; 1st class certificate, D. M'Hattie; 2nd class certificates, A. Robb, W. Gardner, R. Livingstone.

Practical Examination of Horses as to Age, Soundness, Operations, &c.—Gold medal (by Principal M'Call), R. Miller.

Practical Examination of Cattle and Sheep as to Age, Soundness. Operations, &c.—Gold medal (by Professor M'Call), J. M'Neil.

GLASGOW VETERINARY COLLEGE MEDICAL ASSOCIATION.

At a meeting of the members of this Society, convened within the Theatre of the College, Principal M'Call in the chair, the following gentlemen were awarded the Honorary and Fellowship Diplomas of the Society:—Messrs. R. Mitchell, Glasgow; J. A. Todd, Brighton; R. Miller, Strathaven; J. M'Neil, Greenock; L. H. Macqueen, Cardonald.

At the termination of the proceedings, Mr. M'Neil, in the name of the final year's students, presented Principal M'Call with a beautiful walking-stick, in commemoration of his spirited and successful defence of their interests, which were so seriously threatened by a recent edict of the Council of the Royal College of Veterinary Surgeons.

ROYAL VETERINARY COLLEGE.

THE Duke of Cambridge took the chair on July 17th at the annual general meeting of the Governors of the Royal Veterinary College, which was held in the Board Room of the Institution in Great College Street, Camden Town. There was a good attendance, among the Governors present being Lord Egerton of Tatton, Lord Ancaster, General Sir F. FitzWygram, M.P., General Sir Henry Ewart, Professor Brown, Sir Nigel Kingscote, Mr. Albert Brassey, Mr. H. G. Sutton, Mr. Berens, Mr. A. J. Bloxam, and Mr. Richard N. Powys (Secretary).

The 21st report of the Board of Governors stated that during the year 1895-96 70 students had entered the College. In their last report the Governors expressed the hope that the decrease in the number of students entering the College on account of the increased severity of the examinations in general knowledge would gradually disappear. A comparison of the number of entries during the present year and last showed that this hope was likely to be realised. The Governors of the Royal College of Veterinary Surgeons had agreed to hold an examination in July instead of in May, and so allow a summer session to form an integral part of the regular College curriculum. The summer session during the present year had been held with most satisfactory results. At the examinations held by the Royal College of Veterinary Surgeons in March last, 65 per cent. of the students who presented themselves proved successful. The number of students at the beginning of the winter session was 241, as against 274 in 1894. During the year 49 students had obtained the diploma of the Royal College of Veterinary Surgeons, 10 students passed the first professional examination, and 23 the second. The number of animals brought to the College for advice and treatment had been 1,817, against 1,269 in the preceding 12 months. Of that number 1,208 had been treated in the infirmary. The income for the year had exceeded the expenditure by £453, and the Stable Department showed an increase of £595.

In moving the adoption of the report, Sir NIGEL KINGSCOTE remarked that the state of the College during the year had been highly satisfactory, not only in the number of students, but the changes going on in the curriculum had been more than fairly maintained. The work carried on during the year had been larger than ever, or quite as large, and the College was more appreciated every day by the agricultural community. Their relations with the Royal Agricultural Society were also very cordial and satisfactory. He regretted the smallness of their subscribers—126 life and 958 annual—which was not enough for such an institution as this. They often found it very difficult with their limited resource to make both ends meet.

Sir HENRY EWART seconded the motion, which was unanimously agreed to.

On the proposition of Colonel KINGSCOTE, seconded by Lord EGERTON OF TATTON, the Duke of Bedford was elected a Governor, and Lord Stalbridge and Sir Walter Gilbey elected vice-presidents of the Institution.

The CHAIRMAN then announced that the Coleman silver medals had been won by Mr. F. Verney and Mr. P. S. Howard, both of whom had gained an equal number of marks, and the bronze medal by Mr. W. J. Bravning.

At the instance of Lord ANCASTER, seconded by Lord EGERTON OF TATTON, a hearty vote of thanks was accorded to His Royal Highness for his occupancy of the chair, which was cordially agreed to.

The DUKE OF CAMBRIDGE, in reply, expressed the hope that they might succeed in obtaining more subscribers, and that more horses might be sent to the College for inspecting and passing. That was what they stood so much in need of, and, if they could only accomplish that end, the excellent work

done at the College would become better known, and the Institution would be more widely utilised. While he wished the Institution every possible success, he regretted that he could devise no means by which that end could be attained.—*Morning Post.*

NEW VETERINARY COLLEGE, EDINBURGH.

THE annual distribution of prizes to the students took place on Tuesday, 14th ult. Principal Williams, who presided, referred to his forthcoming visit to Jamaica to investigate a cattle disease in the island, and said he felt it a very high honour to have been selected by the Government for that work, notwithstanding the fact that there were Government officials who might have been sent.

Mrs. W. O. Williams presented the prizes as follows :—

Principal's £20 prize—A. M. Porteous and J. H. Webb (equal).

Horse Pathology (medal)—J. Kenyon; certificates (first-class), A. M. Munro, J. A. Connell, M. E. Williams, J. E. Hutchinson, and A. W. Findlay.

Cattle Pathology (medal)—M. E. Williams; certificates (first-class), R. S. Rowlands and J. Kenyon.

Morbid Anatomy (medal)—M. E. Williams; certificates (first-class), R. S. Rowlands and W. M. Ogilvy.

Ashton Medal (for best Practical Examination)—M. E. Williams.

Materia Medica (medal)—W. L. Cockburn. Special certificate—G. C. Barber. Certificates (first-class), A. M. Munro, W. L. Jones, W. M. Ogilvy, R. S. Rowlands, and A. M. Porteous.

Demonstrators of Anatomy (medals)—M. E. Williams and W. L. Jones.

Practice (medals)—H. S. Jones and J. M. Walker.

Best General Essay (silver medal)—M. E. Williams.

Special Essay (medal)—R. D. Williams.

Best Communication— (medal)—J. D. Knowles.

Physiology (medal)—G. J. Roberts.

Senior Anatomy (medal)—G. J. Roberts.

Histology (medal)—Sidney Robson.

Junior Anatomy (medal)—W. L. Gascoyne.

Botany (medal)—W. L. Gascoyne.

Zoology (medal)—W. L. Gascoyne.

Chemistry (medal)—W. L. Gascoyne.

Physics (medal)—H. V. Mossman.

At the recent examinations of the Royal College of Veterinary Surgeons, held in Edinburgh, the following students from the above College passed their examinations :—

Class A: J. Dyson, J. Evans, W. L. Gascoyne*, G. H. Livesey, A. McRae, H. V. Mossman*, R. A. Piunkett, and H. Taylor †.

Class B: G. J. Roberts* and E. Marrison.

Class C (4 years): W. H. Savage†.

Class C (3 years) *Theoretical*: G. C. Barber, W. L. Cockburn, J. A. Connell, D. J. Elias, J. E. Hutchinson, H. S. Jones, W. L. Jones, J. Kenyon, and M. E. Williams.

Class C, *Practical*, and obtained their diplomas: W. L. Cockburn, Springside; J. A. Connell. Carnbore, Dervock; D. J. Elias, Anglesea; J. E. Hutchinson, Goole; H. S. Jones, Anglesea; J. Kenyon, Burnley; M. E. Williams †, Ystrad, Rhondda; J. Nuttall, Preston; and H. W. Phelan, Clonmel.

* 1st Class honours, † and Class honours.

THE CENTRAL VETERINARY MEDICAL SOCIETY.

AN ordinary meeting was held on Thursday, the 2nd July, at the Royal College of Veterinary Surgeons, 10, Red Lion Square, Bloomsbury, Professor J. Penberthy, the president, occupying the chair. The other fellows present were: Messrs. J. Baxter, Hugh A. McCormack, C. H. Cordy, J. A. W. Dollar, F. W. Dowell, H. Edgar, Professor F. Hobday, Professor Macqueen, F. C. Mahon (hon. sec.), W. Perryman, A. Prudames, T. Rowe (hon. treas.), W. Reekie, H. M. Singleton, W. E. Taylor; and as visitors: Vet.-Lieut. Baldrey, E. Dean, Morgan Evans, and Alex. A. Johnson.

The minutes of the preceding meeting were taken as read, and were confirmed on the motion of Mr. Prudames, seconded by Professor Macqueen.

The London County Council and the Mallein Test.

THE Hon. Sec. (Mr. F. C. MAHON) read the following letter which he had received from the clerk to the London County Council:—

Spring Gardens, S.W.,
27*th June*, 1896.

DEAR SIR,—With reference to the inquiries contained in your letters of the 9th of March and the 6th of June last, on the subject of the use of mallein as a test for glanders-farcy, I am instructed to inform you that the Council has advised its veterinary inspectors to use the injection of mallein when they consider it likely to be useful in the diagnosis of glanders, but the Council does not go behind the certificates of their veterinary inspectors.—I am, &c.,

(Signed) C. J. STEWARD, Clerk to the Council.

The CHAIRMAN: That is the result of our long discussion. I do not know whether you will consider we are much further forward or whether we should ask for further information. The secretary tells me that he has acknowledged the receipt of the letter and I do not know that we can do anything more. Has any gentleman any remark to make.

Professor MACQUEEN: No, I think it is highly satisfactory.

The CHAIRMAN: I think you will all agree with Professor Macqueen that it is satisfactory, and I suppose we must keep the letter in the archives of the Association.

Affiliation of Societies.

The CHAIRMAN: Owing to other business a minute of a general meeting on rather an important matter has been overlooked, and that is the reason why it has not been particularly specified in the items of the agenda. The circulars were printed before the secretary had his attention specially drawn to the omission. You will remember that it was arranged that a sub-committee should be formed to take into consideration the action of this Society with regard to the proposal of Professor Macqueen's for the affiliation of the local veterinary societies with the National Veterinary Association. We decided to send delegates to a meeting of the representatives of the different associations to consider the matter. We omitted, however, to name our delegates, and I think we can now supply this omission.

Professor MACQUEEN: The majority of the societies have already supplied delegates and we are awaiting the decision of the Central and the Royal Counties Associations.

The CHAIRMAN: How many delegates have each society appointed?

Professor MACQUEEN: Two. And I propose that the President and the Secretary be chosen to represent this Association.

Mr. PRUDAMES: I second the motion. I do not, however, think that we should require our delegates to pay their own expenses. If they devote their time to our interests, I think they should be paid their expenses.

Mr. TAYLOR thought it was hardly fair that they should require their delegates to pay their own expenses. He proposed that the Society defray their expenses.

Mr. PRUDAMES seconded the motion, suggesting that they should name some approximate sum.

Mr. TAYLOR: I propose that a sum not exceeding three guineas be allowed each delegate.

Mr. PRUDAMES seconded the resolution, which was carried unanimously.

Exhibition of Post-mortem Specimens, Instruments, etc.

Mr. DOWELL exhibited an apparatus for weighing powders by the grain, which, he said, was the invention of a Coventry man who, happening to be as poor as a church mouse, gave it to him. He also exhibited an enema-syringe, which was not, he said, a great alteration from the ordinary syringe. He had it made so that, instead of screwing off the muzzle, it simply punched on in a way he illustrated, so that they might leave it in the horse's rectum. Mr. Dowell further showed a couple of hammers for removing horse's shoes and nailing, and another instrument which he considered very useful in case of parturition.

Mr. ROWE considered that the hammers submitted were hardly heavy enough for the purpose intended.

Professor HOBDAY said he had two ideas to bring under the notice of the meeting; the first one was that of an inhaler, made with a view to administering the requisite quantity such as they gave in distemper. A wire box under a leather inhaler fitted any size of dog. Another invention he introduced was that of a stable thermometer, the work of Mr. E. A. Dean.

The CHAIRMAN: Is the thermometer to be introduced into the bran mash or water for drinking?

Professor HOBDAY: Yes.

Replying to Mr. Edgar, Professor HOBDAY said that the cost of the instrument (as he was informed by Mr. Dean, who was present) would be about 3s. 6d.

The CHAIRMAN exhibited part of the cæcum of a horse invaded by *strongyli tetracanthus*. The worms had reached a portion of the intestines where they did not often find them. They were all aware that this parasite did a great deal of damage in London as in the country. The other exhibit he introduced was the worm (*pentastoma tæniodes*), rather uncommon in his experience, found in the nasal cavities of the dog.

Mr. PORCH displayed an extensive fracture in the occiput, which he said was unparalleled in his experience, the occipital bone being entirely parted from the other portion of the skull. This mischief was caused by the horse rearing up and falling on the floor of the stable.

The CHAIRMAN: Had it a halter on?

Mr. PORCH: Yes.

Mr. EDGAR: Did it hit its head on the manger?

Mr. PORCH: No, the animal came flat on its back. I have seen several fractures of the occiput, but never so extensive a fracture as in this instance.

Mr. VILLAR: Had you seen any visible symptoms during life to lead you to suspect such mischief, and did you notice in particular any hæmorrhage from the ears? The reason I ask is that quite recently in my experience a colt, led out for the usual operation, reared and fell backward on its head. It was stunned. It did not regain any kind of consciousness for three hours, and very shortly afterwards it died. In this case, I found, on making a *post-mortem* examination, there was fracture of the occipital bone, petrous-temporal bone, hæmorrhage from the ears was regarded as diagnostic of fracture of the skull.

Mr. PORCH said in the case he instanced he noticed there was a great deal of hæmorrhage from the nose.

Mr. EDGAR produced a specimen of a horse's shoe, which, he said, had been used by a former army smith in his neighbourhood with the result that the blacksmith lost his trade. He (Mr. Edgar) wanted to know whether the practice pursued by his neighbour was that in vogue in the army. Mr. Edgar next exhibited two metacarpal bones from an ox, very extensively developed. Also the femur of a St. Bernard bitch. The bitch was an aged one, and his opinion was asked about her last year. He found she had a very extensive swelling over the hip-joint, and she could only very indifferently use the limb. He diagnosed fracture of the femur with abscess forming upon it. Two months afterwards he found her almost completely paralysed. A *post-mortem* examination revealed a tumour on the head of the femur weighing a pound and a half. The tumour was really organised pus, and of such solid consistency that it had to be boiled for several days. His opinion was that this was a fracture.

He then brought forward another case of fracture, as to which he invited their views. The subject was an aged pony, twelve or fourteen years old. It worked hard in a milk cart—three rounds a day. One Sunday morning it was taken out, and as usual went a couple of miles perfectly well. It was not noticed to be lame or stiff. She was afterwards removed from the shafts, and when he examined her in the stable he detected fracture of the bone, and immediately placed the animal in slings. The mare went on very favourably for the first three or four days, but the limb, was absolutely stiff. He maintained her under the influence of morphia to keep the system as quiet as possible, but the fourth day, gangrene of the limb supervened and she died. In making a *post-mortem* examination he found the fractures as they appeared in the *post-mortem* examination which he submitted. He told the owner what he thought was the cause, and he desired to know whether they confirmed his opinion. They would see the position of the fracture and what the cause of the lameness was.

Another case he submitted was one of pericarditis in a cow. She was ill three or four weeks, and one could hear her heart simply swashing in the pericardial fluid. In one particular spot the pain was very great. Afterwards, as she was wasting, the owner had her killed. When she was killed two pieces of wire were found sticking into the sac of the heart. Although he had seen many cases of pericarditis, he never saw so horrible a case as this before. He noticed that the sac was formed just behind the diaphragm.

Mr. ROWE said the specimen he produced of the dog's femur was as clear a case of osteo-porosis as he had met with in his life. He submitted three other specimens. One was the knee of a St. Bernard. He added that in the conditions of disease which were involved it was impossible to truly diagnose the disease, and the only indication was the exudation of small quantities of serous fluid, to dissect which was absolutely impossible. He contended that there was absolutely no cure for it.

With reference to the cardiac specimens exhibited, he pointed out that the specimen of the cow's heart was punched through the upper surface round the butcher's meat skewer and became part and parcel of the animal.

Mr. EDGAR pointed out in the specimen of the femur of a dog which he produced the pus at the joint. The abnormality was due, he was certain, to injury. The muscles of the quarter were wasted away and the bulging bump at the enlargement of the hipjoint had evidently discharged a considerable quantity of pus, perhaps three or four ounces. On questioning the owner Mr. Edgar learnt that some months previously the dog had had a stone thrown at her, but he never knew where the stone hit the animal.

Mr. PRUDAMES alluding to the case of pericarditis which Mr. Edgar had

mentioned said that such cases were really more common, perhaps, than was supposed. During the past two or three weeks he had met with two or three similar cases. The one most vivid to his mind, was a cow which when he was first called to see her, had the ordinary symptoms of indigestion with also peritonitis. The animal convalesced and he lost sight of her for some considerable time. He was called in again and was told that the cow he had then to examine was the one he had attended before. He found distinct evidence of pericarditis, and also by external adhesions he was led to conclude that there was also disease of the rumen. There seemed no special liver affection but there were signs of general dulness and a capricious appetite. When the symptoms had had time to develop his suspicions were confirmed, and he distinctly heard the swashing to which Mr. Edgar had referred. The palpitation of the heart produced a gurgling sound as it were. There was a considerable internal growth. On making a *post-mortem* examination, at which the owner of the animal was present, the first thing that struck him (Mr. Prudames) was that the rumen was adherent to the posterior part of the diaphragm. When he cut through the diaphragm he found that the flow from the diaphragm to the peticardium was one mass of organised lymph, and in the pericardium there was a considerable mass of the usual material. Dissecting the parts, he came across a piece of copper wire which had passed and caused injury to the liver. There was the usual amount of thickening which they found in these cases.

Mr. ROWE said he had thought that the subject of unchoking in the smaller animals might afford an interesting topic for discussion at their meetings, and he had intended bringing forward the subject but circumstances had always prevented him. Probably his observations in connection with this matter were more extensive than those of some of the gentlemen present. The instrument he exhibited represented, he explained, a tube for unchoking a human being, but he failed to see that this instrument was of much use in the case of the dog or the cat, owing to the enormous power of the "masseter muscles"; and, as the majority of his patients were very vicious, he had to hit upon something else to effect the desired object. This (continued Mr. Rowe) represents an instrument sold probably by an instrument-maker for unchoking a dog or cat. It is no uncommon thing for me to return home and find a dog or a cat in a basket, and described as "choked." But the impediment may be between the teeth or at the back of the glottis, and if you are not very careful when you take the animal in hand, it may bite you through and through. Hence I invented these (producing knuckle pincers), which are enough to break any dog's jaw in existence. This little tube (another exhibit) will go into the animal's throat, and perhaps push the object, which is the cause of the impaction too far down to be removed; hence the tube requires not only to be strong enough, but to be in the hands of an active man, a man quite equal to the necessities of the case. A little bit of practice is often necessary to catch the edge gently, and push the object down, the object being very often a needle or piece of bone. These steel guards serve to protect my fingers whilst operating. Many a successful case has passed through my hands. In some cases the mechanical obstruction is simply placed between the teeth here (indicating position). Having been bitten many times, and desiring to guard against rashness, I hit upon the idea of improving the ferret muzzle. Here (exhibiting invention) is the exact idea that answers the purpose. You can pass it quickly over the back of the jaw, and keep the mouth from being active, and thus prevent your fingers from being bitten. In some cases it is not necessary to go to the length of forcing down or trying to withdraw; and in that event this is the most beautiful instrument I have ever seen. Mr. Rowe went on to say that he had invented various muzzles, and could have brought many more than those he exhibited. He was, perhaps,

much assisted in his operations, and the successful use of the instruments he employed, by the fact that he was ambidextrous. In this he had probably an advantage over most practitioners. Having remarked upon the enormous power of the masseter muscles—quoting an extract from a periodical giving instances of this—Mr. Rowe alluded further to the success of his operations, admitting, however, that he had failures as well. He incidentally remarked that it was astonishing how often dogs and cats were found to be suffering from the obstruction of needle and thread.

After criticism and comments upon Mr. Rowe's observations, to which that gentleman replied,

The CHAIRMAN alluding to remarks made about the curious things dogs and cats, and other animals had been known to swallow, said if they were all to recount their experiences in this matter, the discussion would occupy a very long time indeed.

On the motion of Mr. PRUDAMES, seconded by Mr. PORCH, cordial thanks were accorded to Mr. Rowe and to the other members of the Society who had interested and informed the meeting by exhibiting and explaining *post-mortem* specimens and instruments.

The proceedings then terminated.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE quarterly meeting of the Association was held at the Grand Hotel, Manchester, on Thursday, June 18th, 1896. Tea at 5 p.m.; business, 6 p.m. Present: The President (J. H. Carter, Esq.). in the chair; also Messrs. J. B. Wolstenholme, E. Faulkner, W. A. Taylor, W. Dacre, S. Locke, Alec Lawson, T. Hopkin, Jas. Laithwood, Geo. Morgan, R. B. Moore, McKenna, H. D. Chorlton (Hon. Sec.), and Mr. Butters, visitor.

The SECRETARY read so much of the minutes of last meeting as appeared in the Association's minute book, which was approved. The other portion containing Mr. Jas. Laithwood's paper on tuberculosis and discussion thereafter, and which was published in *The Veterinary Record*, was, upon the proposition of Mr. W. A. TAYLOR, seconded by Mr. E. FAULKNER, unanimously taken as read.

The SECRETARY read a few apologetic communications for non-attendance at the meeting.

He also read a letter from Colonel Lambert tendering his resignation of membership of the Association, but the President stated that on receipt of this communication he wrote to Colonel Lambert and he was pleased to mention that he had received a letter from him withdrawing his resignation.

With respect to the balance sheet of the Association for the past year, Mr. S. LOCKE drew attention to the large amount of arrears in members' subscriptions and added thai excepting this feature the sheet was highly satisfactory.

Mr. E. FAULKNER proposed that the Treasurer or Secretary should write to those members in arrears with their subscriptions, calling their attention to the fact.

Mr. S. LOCKE seconded, and the proposition was carried unanimously.

Mr. W. A. TAYLOR took exception to the names of guests being mentioned in the balance-sheet, and suggested that in future they be left out.

Mr. E. FAULKNER said this point had occurred to him, and he thought it would be much better taste to omit the names in future. This suggestion met with the approval of the members. He also moved the adoption of the report, and complimented the Treasurer on the manner in which he had kept the accounts.

Mr. ALEC. LAWSON seconded the motion with pleasure, and it was carried unanimously.

Mr. FAULKNER submitted the names of Mr. Robert Ward, M.R.C.V.S., and

Mr. Peter Gillespie, M.R.C.V.S., for election as members of the Association. Mr. W. A. Taylor seconded both. Carried unanimously.

Mr. LAITHWOOD proposed that Mr. Harry Percival, of Macclesfield, be a member of the Association.

A Case of Tracheal Abscess.

Mr. FAULKNER said he was called in consultation with a veterinary surgeon to the case, that of a five-year-old heavy draught horse, which had been under treatment some little time for broncho-pneumonia with acute laryngitis, and as suffocation had threatened, he had inserted a tracheotomy tube, but there was no relief from the insertion of this tube, and therefore he asked Mr. Faulkner to see the horse, which he did, and found the breathing much embarrassed, with a loud roaring noise, notwithstanding the tube. The pulse was something like 72, temperature 103·2; there was also a good deal of soreness about the throat. He also heard a decided rasping noise below the tracheal opening where the tube had been inserted, but although a very careful examination externally was made, he failed to discover any indication of injury to the trachea, or any swelling of the parts. On manipulating and passing down the trachea, however, he found just where the trachea enters the chest a considerable amount of pain (between the sternum and the under surface of the trachea). On pressing upwards against the base of the trachea there was palpable pain. He could manipulate away up to the tracheal opening without any indication of pain whatever, but whenever pressure was applied to this particular spot where the trachea recedes into the chest, there was undoubted pain. His diagnosis was an obstruction in the trachea, probably of the nature of an abscess, or a growth. The prognosis was unfavourable. The horse was seen the next day, when the conditions were very much the same; there was no excessive mucous discharge, nor pus, but while under observation for something like half-an-hour the breathing all at once became dreadfully embarrassed. The horse coughed violently, and during this paroxysm up came a lot of pus right through the tracheal opening. It was then evident to him that there was an abscess, and the violent paroxysm of coughing had liberated the pus, and a certain quantity had passed through the tracheal opening. He was apprehensive of the animal dying from suffocation, or possibly living on, and dying from, pyæmia.

Within the next 24 hours, however, the horse died, and upon *post-mortem* examination there was acute laryngitis, broncho-pneumonia, and, on opening the trachea, he found that immediately on cutting the underneath surface of the trachea a quantity of pus escaped; and, taking the trachea off from the inside of the chest and getting round the upper surface of it, he came across a large abscess, which appeared to involve a portion of the muscular tissue superior to the tracheal rings. In the tissues immediately underneath there was a cavity involving the superior tracheal rings, and the sub-mucous tissue; there was atrophy of the tracheal rings, and externally between the muscles and the trachea there was a sac where the pus had been lodged, extending to the mucous membrane of the trachea, and from the specimens which he exhibited they would find that it was when the fit of coughing came on that the mucous membrane ruptured where it had got very much thinned and gave exit to the pus.

He had seen only two cases of this kind before. In one tracheotomy was performed without success, the horse dying from suffocation through the bursting of the abscess. In the other, which occurred a litle time ago, the horse got cast, struggled violently, after that had broncho-pnemonia with inflammation of the trachea. Tracheotomy tube was put in, and the horse went on for a time, but it was evident there was an obstruction below the tracheal opening.

Post-mortem examinaton showed that the horse had broncho-pneumonia with laryngitis, also all that portion of the trachea just inside the chest, extending perhaps four or five inches, showed evidence of inflammation of the mucous membrane and a necrotic condition of the sub-mucous tissue, which was detached and undoubtedly caused bulging and pressure with occlusion of the trachea and suffocation. Its situation was immediately within the first two ribs. He could find no indication of external injury.

Mr. WOLSTENHOLME thought it just possible that some hard-pointed substance in the food had passed through the œsophagus and so injured the trachea as to lead to the formation of the abscess. He also communicated a case of lympo-sarcoma in a horse in which the tumours weighed 139 lbs.; also exhibited macroscopic and microscopic specimens of the same. Also the case of a horse which during six hours had been vomiting repeatedly. There were 27 round worms (Ascares Megalocephalæ) voided in this manner. On *post-mortem* examination, acute inflammation of the commencing portion of the small intestines was discovered, with a rupture therein of eighteen inches in length, at a distance of fifteen feet from the pylorus. Also the details of a case of locomotor ataxy in the horse

Mr. HOPKIN said the subject brought to his mind a case of vomition without rupture of the stomach—that of a horse which was doing a very extraordinary feat, as regards exertion, on a very hot day. The animal had gone so far, but had suddenly stopped, dead-beaten, blowing and sweating, but not so much distressed as not to be able to graze for some considerable time on the grass near the track. He saw it late the same night and found it very near to death—cold sweat, stertorous breathing, drooping head, staggering gait, pulseless—and soon after he got there it went down and there was continuous vomition until death. The grass came up a dark green liquid without any effort. On *post-mortem* he found an extensive transverse rupture of the rectum.

Mr. FAULKNER said he had seen two cases of active vomition in the horse without any lesion at all other than the stomach, recover.

The PRESIDENT tendered his sincere thanks to the gentlemen who came forward with the interesting specimens. He exhibited a specimen of a trachea from a cow, several rings of which had evidently been fractured in the front, and as a result the trachea had become much compressed laterally. He also quoted the case of a mill horse. It appeared the shaft had fallen on the heel of the forefoot. Upon examination there was a tremendous amount of swelling and heat, the horse being in great agony. He feared manipulating the joint himself, as he was under the impression that it was fracture of the os pedis. He put him into slings at once, and gave the usual physic and fomentations, and used every possible antiseptic. At the end of three weeks the horse commenced to point very slightly and seemed to bear weight on the injured leg. The animal, however, died, and upon his assistant dissecting the part, to his great astonishment he found the splinter exhibited. The President also exhibited the femur of a puppy which was brought to him with a fracture. He found that it would be useless putting it into plaster or splints on that part of the leg, so he advised the owner to put it into a box. The bone united. In nine weeks and four days after the fracture occurred the dog died of distemper.

The PRESIDENT proposed that the Association should give something towards Professor Walley's Memorial Fund.

Mr. FAULKNER supported the proposition. He also thanked the President for the cases which he had brought before the members. which he thought were very interesting and a great deal could be gained from them.

The PRESIDENT said he would, at the next meeting, propose that £5 5s. be given to Professor Walley's Memorial Fund.

Mr. LAITHWOOD quoted the case of a cow which he found bellowing and in a very nervous condition. The bellowing came on about every five minutes. She had not eaten or drunk anything all the time. There was a good deal of saliva from mouth, eyes were starting, in a very nervous condi-condition generally; pulse about 72, temperature 103. Bowels were apparently alright. The farmer had given her a pound of salts and some treacle. He (Mr. Laithwood) came to the conclusion that the cow was suffering from rabies and ordered her to be destroyed. He looked her over and found that on the inner flank there was a wound 1½ inches long, which had apparently been done something like three weeks or a month, as it was nearly healed. Beyond that he could not see no other marks. He asked the members if this was a case of rabies or not.

Mr. BUTTERS instanced the case of a cow which was in milk. She had been ill for three days before he saw her. He was told she had showed paroxysms of constant bellowing. When he saw her she was in a loose box, and appeared to be in a very weak condition. There was evidence of some difficulty in breathing, but there were no violent symptoms. He did not diagnose the case as one of rabies, but upon reading up other cases and conversing with other veterinary surgeons, he came to the conclusion that it was a case of rabies. Next day he saw the cow it was in a weaker condition and the bellowing weaker. On *post-mortem*, the lungs, heart, stomach, and intestines all appeared normal. There was a discharge from the mouth. He did not know if there were any distinctive diagnostic symptoms of rabies in cattle, but he thought that the constant bellowing was one of the best symptoms. The cow gave a little milk while in that condition, which had been given to the dogs about the place, and none of them showed signs of rabies afterwards. He thanked the gentlemen who had brought forward *post-mortem* specimens, as he had listened with much pleasure to the remarks made by the various speakers.

Mr. S. LOCKE proposed a vote of thanks to the President for presiding.

Mr. ALEX. LAWSON seconded.

Carried unanimously.

ROYAL COUNTIES VETERINARY MEDICAL ASSOCIATION.

A MEETING was held at Aylesbury on Friday, the 3rd ult. Those present were Messrs. A. L. Butters, London, President for the year; J. P. S, Walker, Oxford, Hon. Treasurer; J. Sutcliffe Hurndall, London, Hon. Secretary; T. W. Lepper, Vice-President, Aylesbury; George A. Lepper, H. G. Lepper, James East, Aylesbury; John Varvey, Winslow; E. C. Howard, Newbury; John Hatch, Beaconsfield; E. P. Owen, Thame; G. E. King, Abingdon; Wm. Hunting and Frank W. Dowell, London; and Professor G. T. Brown, visitor.

The Luncheon.

At 1.30 the party assembled by invitation at Mr. G. A. Lepper's honse in Walton Street and received a cordial welcome. The genial and universally respected host took the head of the table, being supported on his right by Mr. Butters and on his left by Professor Brown, and faced by his popular eldest son, Mr. H. G. Lepper. The repast was of the most elegant description. At its completion, when cigars had been lighted,

Professor BROWN rose and said he had been asked to do what he would have done spontaneously, for he was sure it would be congenial to the feelings of them all. He proposed the health of his old friend Mr. Lepper, who was entertaining them that day. He (Professor Brown) might say that he occupied a somewhat peculiar position. Owing to a variety of circumstances—constant occupation amongst them—he believed he might say that was the first time he

had ever attended a meeting of any of the country associations. In his earlier days he had attended meetings in that very room rather frequently; he had just been reminded of one occasion on which a very celebrated doctor of medicine and himself sat there till one in the morning, discussing subjects that were, of course, purely of a scientific character. He had seen his friend Mr. Lepper very frequently since then, even so recently as not many weeks ago, when he found him taking luncheon at the Senior Constitutional; but when they met that day it carried him back certainly to a period of 30 years, and he had a very pleasant conversation on their experiences during that terrible catastrophe, the outbreak of cattle plague in 1865. That interval was very quickly leaped over, and that day he found himself, in common with the company he was addressing, enjoying the hospitality of their good host—hospitality which had been so profuse that it required a certain amount of self-control to keep themselves fit for another discussion—that of the subject which would shortly be brought forward. He was rejoiced to see their friend Mr. Lepper looking so remarkably well after the unfortunate results of that accident which they all deplored, and which they hoped would have only a temporary ill-effect. At any rate, whatever happened to him, he was inclined to say that Mr. Lepper would never give up his cheerful appearance, but would fight it out to the last. He asked them, in a perfectly informal manner, to do that which they could not separate that day without giving themselves the pleasure of doing, namely, to drink the good health of their host, Mr. Lepper.

The toast was drunk with fitting cordiality.

Mr. LEPPER rose and said it gave him great pleasure to return Professor Brown and the other gentlemen present his thanks for the honour they had done him in attending there that day. He only wished he could have seen more present, but from one circumstance and another their numbers were, unfortunately, very short. He was deeply pleased that he had succeeded in getting Professor Brown down there that morning, because, as he said, it had brought back old reminiscences of the days when he was frequently in their neighbourhood, and, in conjunction with him and Dr. Seeley, the three of them travelled a great deal over that country, and had a great many consultations in that room afterwards during the time of the cattle plague. Thank goodness, that plague was eventually eradicated, and he could not but think that if the people in power now were to follow the example set them by the Government at that time, it would be much better, and there would be a much better chance of getting rid of the troublesome epidemic that had been raging now so many years. He was quite sure that we would never get rid in England of any epidemic disease of that kind until the Government enlisted the sympathy of the veterinary profession. They must have the profession to work with them, or their labours would be fruitless, and would continue so. In conclusion, he would say that he had been fond of his profession from the time he began to study, and if he were to have his time over again, he would certainly choose it once more. He begged to thank them very much for the honour they had done him in accepting his invitation that day, and assured them that if they were travelling in that district at any time, his house was always open, and he would be very glad indeed to see them.

Mr. J. P. S. WALKER said the Chairman had kindly given him permission to offer them a toast, and he had great pleasure, however feebly he might perform the task, in proposing a very hearty vote of thanks to, as well as the very good health of, Mrs. and the Misses Lepper. Mr. Lepper had been fortunate in having his good wife to assist him all through his journey of life, and he was sure he was deeply grateful for the fact. He wished to offer their very best thanks to Mrs. Lepper and her daughters for the very kind way in which they had entertained them that day. He thought it was just

twelve years since the members of the Association were entertained there before, and he hoped that when other twelve years had come round they might all once more be entertained by Mr. and Mrs. Lepper at that hospitable board.

Mr. H. G. LEPPER, on behalf of his mother and sisters, thanked Mr. Walker and the company generally very heartily for the kind way in which they had been good enough to drink their healths. It gave them very great pleasure indeed to see them there that day, and he was sure they accorded them a very hearty welcome.

The Meeting

Had been arranged to be held at the George Hotel, Aylesbury, but so pressing was the invitation of Mr. Lepper and his family, and so seductive the cosy drawing-room and the tennis-lawn and its surrounding shrubberies and ivy-covered walls, that the members could not resist the temptation to remain where they were for the rest of the afternoon, and accordingly the President took the chair in the drawing-room.

Professor Macqueen's Amalgamation Scheme.

The minutes having been disposed of,

The HON. SECRETARY read the following report from the Committee appointed at last meeting to consider Professor Macqueen's scheme for amalgamation:

"The committee appointed to consider Professor Macqueen's letter, met and fully discussed it. The advantages of the scheme for amalgamation were recognised and admitted, but in dealing with the details, several difficulties presented themselves, the principal being the want of accurate knowledge as to the views of the National Veterinary Association, and how far it would meet the other societies. The following resolution was unanimously carried, viz., 'That the suggestions embodied in Professor Macqueen's letter generally commend themselves to this committee, and it is agreed that a further consideration of the proposals is desirable.' A copy of this was forwarded to Professor Macqueen, and should it meet with the approval of this Association, it will be necessary to appoint delegates to attend the meeting, which will be called to further discuss the scheme."

The PRESIDENT said the Committee met and fully discussed the whole question as far as they could go; but they found, as mentioned in the report, that they did not know exactly how far the National Society was likely to meet their views. Consequently, as Professor Macqueen was going to call a meeting to finally discuss the subject, if the report met with their approval, it would be necessary to appoint delegates to attend that meeting. As they would remember, a circular letter was received from Professor Macqueen, and sent out with the agenda paper of their last meeting. In that letter he suggested that all the societies should amalgamate in one National Society. That practically meant the abolition of the present National Society. There were several points in the scheme—amongst others that each society should retain its freedom as to places of meeting and other matters, and that one subscription to a society should enable a member to become not only a member of his local society, but also a member of the National. It was pointed out that there were times when prompt action ought to be taken by the members of the different associations; and it was thought the different societies should amalgamate in order that the feeling of the profession upon any particular subject might be more readily obtained than it could in any other way. It was proposed, after the different societies had discussed the scheme, to call a meeting of representatives of them all to finally lay out the plans and details. Each society would retain its independence, but by amalgamation, one would be helpful to another.

Mr. WALKER said the idea was to form a National Society, to guard the interests of the profession.

Mr. HURNDALL added that a certain sum would be voted under the scheme from each society, according to its membership, to the National, and that vote would make the members of the individual associations members also of the National. It certainly was not intended to extinguish, or to in any way affect the local societies in their individual action, but to secure from them an amount of support for the National; and thus—as Professor Macqueen said his hope was—to get a far larger representation on the National, and to popularise it by making it truly representative.

Mr. H. G. LEPPER moved that the report of the Committee be adopted, and that the President and the Hon. Secretary be appointed delegates to represent the Royal Counties Association at the forthcoming meeting.

Mr. HURNDALL asked if it was Mr. Lepper's intention that the representatives should be empowered to vote according to the best of their discretion?

Mr. LEPPER replied that this was most certainly his intention. They would represent the Society in an affirmative or negative degree as they considered best.

Mr. KING seconded the resolution.

Mr. WALKER said he took it that the idea of this Association was that they generally approved of Professor Macqueen's scheme if it could be so arranged as not to interfere with the National—that if the National approved of it they approved it also. There seemed to be some difficulty in getting the National Society to amalgamate with local societies.

The PRESIDENT added that so long as the scheme did not interfere with the rights and privileges of the local societies, it appeared to those who had looked at the subject from all points of view that the scheme would be to the advantage of the profession generally.

Mr. H. LEPPER observed that the interests of this Association would be in good hands; and the resolution was carried unanimously.

Mr. WALKER asked if the subject was to be brought before the National Society at the next meeting at Yarmouth?

The PRESIDENT replied that he heard it stated a short time ago that Professor Macqueen intended calling a meeting after the meeting at Yarmouth. He, in his position as Secretary, might "feel the pulse" of the National Society, and then know better what to do.

New Members.

Mr. H. G. LEPPER nominated, and Mr. HUNTING seconded, Mr. B. Eggleton, of Queen Street, Maidenhead, for election at the next meeting as a member of this Association.

Mr. HURNDALL, on behalf of his friend Mr. Rogers, had much pleasure in proposing the election, according to notice, of Mr. F. W. Dowell, who was tolerably well-known to the greater number of the members of that Association.

Mr. KING seconded the proposition, and it was unanimously carried.

Mr. DOWELL returned thanks.

Place of Next Meeting.

On the proposition of Mr. WILSON, seconded by Mr. T. W. LEPPER, it was unanimously resolved to hold the November meeting of the Association at 10, Red Lion Square, London, Mr. Walker and the President expressing the hope that the gathering would be more largely attended than had been the case at recent London meetings.

Interesting Specimens and Cases.

Mr. G. A. LEPPER showed a very large stone which he had taken from the famous racehorse "Favonius." He said the horse travelled with slight difficulty, and had pains in his loins; and eventually he discovered that he had stone in the bladder. That continued for three seasons, and then the horse died from an attack of pneumonia, having suffered a good deal from bladder complications. Mr. Lepper added that a curious feature about the horse when in training was that he used to have a peculiar kind of itching in his hind legs, and would at times rub a pair of bandages to "smithereens" in a night.

Mr. KING related that he had just had a case of cystic calculus in a small pointer dog, which he was called to treat for ophthalmia. The dog died in a few days, and that at a *post-mortem* he found that his diagnosis *ante-mortem* was correct, the stone weighing fully four drachms, rather an extraordinary weight. The stone had been attached to the wall of the bladder, and had from some reason become detached, which was why the symptoms developed so rapidly, he thought. When in the hospital the dog could only pass water by the catheter, and in 24 hours the peritoneum and the region around the penis became discoloured. He attributed death to decomposition set up by retention of the urine.

Mr. T. W. LEPPER mentioned that the urine of "Favonius" was sent to some celebrated physicians in London at the time, and they said there was no symptom of stone, and that his father must have been labouring under some mistake.

Mr. HUNTING: That is what you would expect from a physician when consulted about an animal.

Mr. WALKER, while they were talking on the subject of calculi, would remind members that the Association possessed a very good case of instruments, which could be had by applying to the secretary. The secretary also had sets of dental and lithotomy instruments.

Mr. KING suggested that a list of instruments should be printed on the notice papers of the Association, as was done by the Midland Association. He, for one, did not know that this Association owned any instruments.

Mr. WILSON having related an interesting case of an immense fatty tumour in a cow,

Mr. WALKER reported the case of a tramway horse which he had under his care some months ago. He at first treated it for diabetes, the animal suffering from extraordinary thirst, so that it kept the place flooded with water, and not feeding very well. After a time the passing of urine was largely reduced; but strange to say, although the animal had improved in appearance and fed better, the muscular wasting still continued despite everything he could think of. At last he suggested to the owner that the horse was suffering from tuberculosis. The horse eventually died, and when he made a *post-mortem* he was perfectly satisfied that death was from either tuberculosis or glanders. There were a lot of tubercular deposits in particular parts of the body, and particularly about the neck and inside the thorax and large tumours. He sent some of the largest to an expert who said it must be either tuberculosis or glanders. He (Mr. Walker) was quite satisfied about that, but wished to know which it was. The horse had no symptoms of glanders as far as he could see. Ultimately the report was that it was tuberculosis, and "no mistake about it." As they knew, tuberculosis was very uncommon in the horse. but this, he felt positive, was a genuine case.

Mr. HURNDALL said he felt prompted by Mr. Walker's remarks to give them a few particulars of a case which in similarity to that just related was

somewhat remarkable, and which happened in his practice some two or three years ago. A roan gelding, standing about 16 hands, which was worked by a greengrocer. The horse had become very much impoverished and evacuated a large quantity of long worm, and as the owner was very reluctant to allow him to go into the case closely there remained nothing to do but to supply powders for the worms. When the horse became so feeble that it could not do its work the owner asked him to come to a conclusion as to what was the matter. He then found that the horse was troubled with diabetes insipidus. As in Mr. Walker's case this horse drank excessively and continuously, and ate hardly at all. He ultimately induced the man to let him have the horse down to his own stable. Taking the temperature and pulse regularly, he found that one day the temperature would go down to 100, or even lower, and the next day up to 104 and sometimes a shade over that. He came to the conclusion that there was something more than diabetes to account for the temperatures. Like Mr. Walker, he treated the animal for diabetes, giving it phosphoric acid. The diabetes passed away, the horse resumed a normal production of urine, the thirst was materially lessened, and the animal began to eat a little, but still it got more impoverished in condition, and ultimately it died. On opening the lungs he found a most splendid specimen of miliary tuberculosis, and sent the whole of one lung to Professor McFadyean who said it was quite a clear case. It suggested itself to him whether it was possible that diabetes insipidus and tuberculosis had any connection—whether diabetes was a symptom of tuberculosis.

Mr. WALKER asked how it was to be explained that there was such enormous thirst and passing of urine in tuberculosis. He could not even find a tubercle in the region of the kidneys (which seemed perfectly healthy) of the horse he had described.

Mr. HURNDALL added that as soon as the diabetic symptoms were lessened the thirst lessened.

Mr. HUNTING explained that diuresis was a common symptom, and was recognised in the human subject as an accompaniment of tuberculosis. If one might venture a suggestion it would be that the poison excreted or formed by the bacillus probably caused the kidney mischief.

The PRESIDENT remarked that the case of cystic calculus brought forward by Mr. Lepper was most interesting. Diuresis was more a functional than an organic affection of the kidneys, and he thought one would scarcely expect to find any appearance of it on a *post-mortem* on an animal that suffered so much from thirst. However, he would leave that to the more learned.

Veterinary Surgeons and Jury Service.

The HON. SECRETARY read the following communication :—

Southern Counties Veterinary Medical Association,
Lymington, *June*, 1896.

To J. S. HURNDALL, Esq., Hon. Sec. Royal Counties Veterinary Medical Association.

DEAR SIR,—At a meeting of the Southern Counties Veterinary Medical Association, held at Southampton on the 25th inst., the subject of the exemption of veterinary surgeons from serving upon juries was discussed, and on the proposition of Mr. T. B. Goodall, seconded by Mr. C. Carter. it was resolved to again request the Council of the R.C.V-S. to take steps to obtain, by Act of Parliament, the exemption of veterinary surgeons from serving upon juries.

Also for the revision of fees which are now paid to veterinary when giving evidence in criminal cases, so that they may be placed on a similar footing to solicitors and medical men.

Will you be good enough to bring the above resolution before the members of your Association, and solicit their assistance in removing the injustice from which our profession is suffering?—I am, dear sir, yours faithfully,

C. PACK, *Hon. Sec.*

After some discussion, in which the opinion was not controverted that

action was desirable on both the points raised, it was unanimously resolved, on the proposition of Mr. Walker, seconded by Mr. Wilson, to take similar steps to those reported from the Southern Counties Association.

Mr. WM. HUNTING read a paper on "Throat Affections of the Horse."

At the conclusion of the reading Mr. Hunting was very heartily applauded, and the President invited remarks on the paper.

Mr. WALKER expressed cordial thanks to Mr. Hunting for his kindness in attending and reading such a very interesting and valuable paper, and put certain questions to the lecturer. As to blistering the throat, he must say his experience was not quite in accord with that of Mr. Hunting, because he had seen many cases of very distressed breathing, which he considered to be cases of throat affection, almost immediately relieved by the application of a good blister round the larynx. He had seen very marked good effect from similar treatment of cattle. He agreed with Mr. Hunting that warm application, such as warm water, if constantly applied, relieved distress in those cases excellently, but the difficulty seemed to him to be in properly applying hot water applications.

Mr. T. W. LEPPER heartily endorsed Mr. Walker's thanks to Mr. Hunting. In most things they must, he considered, agree with Mr. Hunting as far as treatment went; but he felt that they did get very good results from counter-irritation in cases of sore throat. He would himself go further than simple blisters. He had had very good results from the application of setons in sore throats, especially of long standing. Setons were excellent treatment in those cases, and he believed that if they were to use them they would also be good in cases of strangles. As strangles often occurred in young animals and animals that had not been much handled, some trouble might be experienced in inserting setons, no doubt, but he believed that if they were used in the early stages of strangles they would not get the secondary formation of abscesses we so often found.

Mr. WALKER added that he did not notice that Mr. Hunting recommended the inhalation of medicaments. He (the speaker) had seen very good success from the inhalation of iodine and of carbolic acid.

Mr. KING observed that Mr. Hunting, in his remarks upon the effect of medicines in producing distressed throat symptoms, had not mentioned aconite. He had seen horses suffer from spasm of the glottis from an overdose of aconite, producing most distressing symptoms. He had also seen horses suffering from eating Indian peas or Egyptian lentils, of which he described the symptoms, which he had also observed among lambs. He entirely disagreed about the effect of blisters, considering it good treatment to blister a horse with a sore throat. Mr. Hunting had not mentioned the the condition recognised as inflammation of the gutteral pouches, of which he had a case the other day iu a racehorse called "Prince Caradoc." His throat had "gone down" considerably at the time he saw him, but it was still large—indeed, blown out to such an extent that the man described it as being "as big as his hat." There was no constitutional disturbance whatever; and he (Mr. King) advised that the horse should be kept on in his fast work, and no doubt the advice was correct, because the horse, in less than a fortnight after, won a race at Birmingham. He had noticed, with Mr. Walker, that Mr. Hunting did not mention the use of medicated steam, but he considered that putting a nose-bag on a horse with iodine, carbolic acid, or what they would, was good treatment. He had seen great benefit from the inhalation of steam, which materially relieved the horse of the distressing symptoms.

Mr. DOWELL referred to a reply in *The Field* to an enquiry about a dog, in which somebody had said that it was "probably inflammation of the gutteral pouch" in the dog."

The PRESIDENT said he must personally thank Mr. Hunting for so willingly

and readily coming to that meeting and bringing that interesting and practical paper before them. He liked the differentiation Mr. Hunting went into with regard to sore throat being pharyngeal and laryngeal. They could not go much further; in fact, he thought the pharynx and the larynx were most frequently both affected together. Mr. Hunting had mentioned a case that he (the speaker) recorded in the last quarterly journal, and which he thought at first very unique, but he had since learned that there were more such cases, though they had not been frequently recorded. The case Mr. Hunting referred to at the beginning was an ordinary case of strangles. There was an enlargement in the sub-maxillary space, and again at the back of the maxillary, and a good deal of distressed breathing and fever, and sometimes the animal could not swallow. One morning he found the swelling had broken, and upon enlarging the opening no pus came out, but a quantity of well-chewed and foul-smelling food. The parts healed up slowly, but left a fistula. During the time the wound was healing the discharge was always coloured with the food the animal was eating. When the wound had healed up to a small sinus it was amusing to see a little jet of water come out at the side of the throat every time the animal gulped in drinking. He tried to heal the sinus by injecting caustics and by other means, but to no purpose. At last he sent the animal to work and took no further notice of it, and in two or three months it had healed up without any assistance from him. What most puzzled him was why the food had got there in the first instance and forced its way down the near side. Like some other speakers he differed from Mr. Hunting with regard to the treatment of sore throat, as he had had good results from the application of a blister, either tincture or oil of cantharides, or some treatment of that character. He agreed that they should never give a drink, but something in the nature of an electuary, and for this he used powdered chloride of potash with treacle, and sometimes found a little powdered belladonna very soothing mixed with the electuary. Inhalations of steam he also found very useful. He had never seen anything approaching a case of diphtheria in the horse, or which he could at all reconcile with the symptoms of diphtheria in other animals.

Mr. OWEN said he quite agreed with the practice of blistering with cantharides, but was altogether against the use of mustard in the treatment of sore throats, thinking it did more harm than good. He had great faith in the saturated solution of boracic acid as a gargle, and also in chlorate of potash.

Mr. HUNTING then replied. He was going to try iced water in the next case of pharyngitis he got. Two days previously he read that same paper to another association, and every man who got up in that room, as was the case now, agreed that a blister was a good thing, and that in some cases it acted like a charm. A remark of Mr. Owen's, perhaps, reconciled that, or rather explained why it was that he did not believe in blisters. What was running in his mind a good deal when speaking of blisters, was the use of mustard. Two or three gentlemen in Lincolnshire also said that they did not use mustard, but cantharides. He wondered if that was the explanation, that those who spoke so favourably of a blister, were referring to cantharides. He had always been nervous since a case he had related, where an ordinary roarer was nearly suffocated by an undue use of mustard. As to inhalations for throat affections, he must say he did not use them, thinking that they did far more good when the inflammation was in the nasal membranes than when it was far back. He could understand when a pharyngeal abscess formed and hung on for some time, that inhalation might do good there. They found great differences in cases of sore throat. Two cases would seem to start exactly alike, and their symptoms would seem to reach a climax about the same time; and then one would subside rapidly and the other remain for, perhaps, a week or two. What was the difference between those two cases? Nothing they could see to start with. There was the difficulty with their

treatment. They happened to blister the "three days' gentleman," and the blister acted like a charm. He happened to poultice, and that also acted like a charm. How did they know in either case that the recovery was due to their treatment, and not to the fact that it was disease in a mild form and free from complications? They wanted a large number of cases under treatment before they could be sure on the point. He thought they would allow that there was a little prejudice against fomentations and poultices because of the difficulty and trouble of their application. He was reminded at Lincoln, as he had been that day, that he had not mentioned aconite. The fact was that it was about 25 years since he saw aconite do any harm, and he had never used it since for any purpose. Indian tares and their effects, referred to by Mr. King, were also mentioned at Lincoln. The symptoms produced by them were always accompanied by paralytic symptoms, and their coming on suddenly, especially if a man did not know what food was being used, would, he had no doubt, be at first very puzzling. The President had said that cases of pharyngeal fistula were apparently not so rare as he had thought. He did not know about that, and until he heard to the contrary from a very large number of members of the profession he should continue to believe that it was an extremely rare lesion in the horse. He wished he could obtain some information about diphtheria, but he thought, from the absolute silence on the subject there and at Lincoln, that he was right in saying that diphtheria did not occur in the horse. Medical men kept harping on those diseases in animals which the veterinary profession did not recognise. It was a curious thing, but it seemed to him that as soon as a medical man got dabbling with animals he was as much at sea as a veterinary surgeon would be with navigation or theology.

Mr. KING, in moving a vote of thanks to Mr. Hunting for his very able paper, said he was personally very much indebted to that gentleman, as he had himself been asked to read a paper that day, but could not possibly do so, his time having been so much occupied. He felt specially indebted to Mr. Hunting for stepping into the breach and taking his place.

Mr. H. G. LEPPER cordially seconded the resolution, which was carried by acclamation.

Mr. HUNTING having replied in suitable terms, a highly successful meeting closed with a vote of thanks to the President for his conduct in the chair, on the motion of Mr. H. G. Lepper, seconded by Mr. Dowell.

Afterwards the Misses Lepper gracefully presided at afternoon tea, and thus ended a long-to-be-remembered gathering.

LINCOLNSHIRE VETERINARY MEDICAL ASSOCIATION.

A MEETING was held at the Angel Hotel, Peterboro', on Tuesday, June 30th. The President, H. Howse, Esq., Lincoln, occupied the chair. There were also present: Messrs. W. Hunting, London; A. L. Butters (President, Royal Counties V.M.A.), Paddington; Captain Russell and T. A. Rudkin, Grantham; J. Mackinder and J. W. Gresswell, Peterboro'; T. B. Bindloss, Long Sutton; W. H. Brooks, Leadenham; B. Freer, Uppingham; F. L. Gooch (President, Midland Counties V.M.A.), and J. E. Shacklock, Stamford; T. Holmes, Bourne; A. Lennox, Crowland; Jas. Smith, Huntingdon; J. Poles, Thorney; H. Truman, March; and J. A. Robinson (hon. sec.) Market Deeping.

The minutes of the last meeting having been taken as read, apologies for absence were read from Dr. Fleming, Professors Penberthy, Williams, Macqueen, and Pritchard, Captain Hayes, and Messrs. Reekes, J. A. Clarke, Dickinson, Hardy, Kidd, T. E. Smith, Weston, and F. W. Wragg.

Captain Hayes wrote resigning his membership of the Association as he was now living at too great a distance to attend the meetings, and his resignation was accepted with regret.

Professor Macqueen's Amalgamation Scheme.

The report of the committee appointed to consider Professor Macqueen's amalgamation scheme was read by the Secretary, who stated that they could not do better than bear out the conclusions arrived at by the Midland Association which appeared in the circular they had before them.

Mr. RUDKIN proposed that the report be accepted. If they could get to work it would be a very good scheme, although perhaps not very practical, If they could get the National Society to work with them it would be a National Society, but in the way it was carried on at present it was not a National Society.

Mr. GOOCH said he was hardly of the same opinion as Mr. Rudkin, because if they got the scheme to work out he thought it would be very practicable, and it would be the best step taken in the profession for some time. As most of them were aware before long there would be a committee appointed, and he would like Mr. Rudkin to add to the proposition two or three gentlemen of their Society for appointment on the committee.

Mr. RUDKIN: We have had no notice of the appointment of a committee.

Mr. GOOCH said there could be no notice until the report from the Society came in. He mentioned that the subscription of 3s. per member would more than meet the present income of the National Society.

Mr. FREER asked if it was necessary that each member of the National Association should be a member of a local association.

Mr. GOOCH said that would be one of the difficulties to consider by the committee.

Mr. ROBINSON said they could not do better than say they supported the conclusions of the Midland Society.

Mr. GOOCH suggested that they should appoint delegates.

Mr. FREER: If delegates are required, I propose we leave it in the hands of the President and Secretary.

Mr. GOOCH seconded. Carried.

Notification of Contagious Diseases (Animals) Act.

Mr. GRESSWELL introduced the subject of the Notification of Contagious Diseases (Animals) Act, and said that at their November meeting a circular was sent out by the Council to the different members for the purpose of ascertaining whether they would adopt the Notification Act. To these circulars there were 787 replies, and out of this number 588 were in favour of it, and 147 were in favour of it only conditionally, and 38 were not in favour of it under any condition. Therefore they had a large proportion of the profession in favour of it. The adoption of the Act might not, perhaps, suit some in the profession, but he thought it would suit the profession as a whole. During the past few years the veterinary profession had been lowered in the estimation of the public, in having to report every case to a police officer, and he thought that in the event of a case it should be reported to the local authority. In the case of glanders why need we trouble to report it without getting paid for it in some way or shape, and perhaps he might get into trouble with a client for reporting a case. He proposed "That the Secretary be requested to write to the Council requesting them to adopt the Notification of Contagious Diseases (Animals) Act as the best method of suppressing contagious diseases in animals, and that the veterinary surgeon in attendance be the person to notify diseases to the local authority or the Board of Agriculture.

Mr. HUNTING said he did not know whether it was the fault of *The Record* or the Council, but the matter had already been adopted by the Council, and they had written to the Board of Agriculture saying that the profession would not object to it.

Captain RUSSELL said it should be something like the rule in the medical profession. Where the Notification Act is adopted the Medical Officer reported to the Health Officer.

Mr. ROBINSON formally seconded the proposition.

Captain RUSSELL: The proposition is hardly necessary under the circumstances.

The SECRETARY: I will write to the Council to let them see we have the matter in hand.

It was ultimately decided to forward the resolution to the Council.

PRESIDENTIAL ADDRESS.

Gentlemen,—I beg to acknowledge the honour you have conferred in electing me your president for the ensuing year. But, whilst tendering you my thanks, I must also express a fear that you have chosen one who is exceedingly unadapted and inefficient for discharging its duties, except in a very imperfect manner.

I have no pretensions at all to be a speaker: indeed, the distaste I have for hearing myself attempt to speak at first caused me to decline the proffered honour, but ultimately I yielded to the express wish of others. That is an apology I offer for attempting a task that I know I can only imperfectly carry out. Neither have I time at disposal to prepare an elaborate thesis or subject to read before you. Simply relating a collection of platitudes I hold to be little less than impudent, not to say insulting. But, however, this to-day is no loss: on the contrary, a gain, for a thorough friend to the profession—one whom all will be pleased to welcome—has, with much kindness, come to the rescue. I allude to Mr. W. H. Hunting, who proposes to read a paper on "Some Equine Throat Diseases," a subject full of interest, which will be rendered more attractive by the exceptionally lucid and pleasant manner in which that gentleman records his observations and experience.

Before I close these few remarks I cannot refrain from expressing a regret that he does not now form one of the Council. No one is more willing, capable, or has done more to advance the interests of our profession, and feeling assured that this opinion is shared by most, if not all of us here to-day, emboldens me thus to speak of the able assistance Mr. Hunting has always readily contributed towards its welfare, and I do not hesitate to say he is much too great a favourite—especially amongst us older practitioners—to recede one iota in public estimation, notwithstanding the recent temporary success of intrigue against him.

New Members.

On the proposition of Mr. ROBINSON, seconded by Mr. MACKINDER, Mr. Truman, of March, was admitted a member of the Association, and Mr. J. E. Shacklock, of Stamford, was likewise enrolled a member on the proposal of the SECRETARY, seconded by Mr. GOOCH.

Mr. HUNTING read a paper on "Equine Throat Diseases."

Discussion.

Captain RUSSELL said the members might congratulate themselves on hearing such a particularly practical paper. He must say that during the 24 or 25 years he had had the pleasure of knowing Mr. Hunting he had never heard him read a paper of a more practical nature. The subject of sore throat was one of great importance, and he could quite appreciate the sentiments expressed by the reader, because hardly ever did two veterinary surgeons or two doctors attack a disease in the same way and yet they all obtained about the same results. He thought that sore throats were far more

liable to be contracted by contagion than by atmospheric influence, but if they took a horse up from the field to a hot stable they would find it suffer from sore throat. As to blistering for sore throat, he did not wish to appear egotistical, but he must admit he believed in blistering. In various cases of influenza he had frequently known men in attendance to take the complaint from the animal. Still he was bound to agree with Mr. Hunting that up to the present he was not aware of a case of diphtheria in a horse. He found that the poultices as a rule were of very little use, for one reason because it was difficult to keep them closely bound to the throat, and for another reason, particularly in the country, they were not able to look after the animal, and the men in attendance were likely to let the poultice came away from the part and get cold. If they were going to use mustard as an application then he must admit his experience was that they would get extensive effusion, and he never used it because he thought it a most cruel preparation. The worst of a mustard plaster was one could never get to sleep. He believed a great deal could be done in the application of ice. They all knew what a splendid thing it was in the mouth when any of them had a sore throat.

Mr. FREER said Mr. Hunting had mentioned effusion of the throat in case of anthrax. The easiest way to tell anthrax was the rapidity of the swelling and distressful symptoms. Dealing with the administration of chloroform the speaker cited a case in which paralysis of the larynx followed the administration of chloroform. Suddenly the horse began to roar. He whipped off the chloroform bag and the symptoms disappeared as quickly as they came on, but for some time he was expecting to see that animal breathe its last. As to fluids he thought it a very dangerous plan. There was no doubt that for a horse suffering from a sore throat there was nothing like an electuary—quinine mixed with honey, chloride of potash mixed with either treacle or honey. He fully agreed with Captain Russell with reference to blistering a horse with sore throat. He must say he had seen the most distressful cases of laryngitis removed by the application of a severe blister. He also knew of the good effect of padding a horse's throat with cotton waste dipped in cold water, and afterwards applying a piece of mackintosh sheet to keep it moist. The application, of course, was somewhat difficult unless a veterinary surgeon was constantly on the spot. As to a poultice, if it was not renewed at the proper time, it did more harm than good.

Mr. RUDKIN, after referring to the application of cold water in cases of laryngitis, expressed his approval of steaming, whilst he had known very beneficial results in submitting a horse to blistering.

Mr. GOOCH said they could not discuss the paper read by Mr. Hunting as it was full of useful observances. As to medicinal agents, in the administration of aconite, they had to be careful as to its use. As regarded the benefits of poultices and blistering, he was in favour of the latter, because they could apply them themselves; but at the same time he must admit, in cases of abscesses, a poultice had a very good effect. As to a stocking with the foot off, if it was tied tightly it could not drop, and it made a very good poultice. He had also had very good effects from steaming, for it not only relieved the lungs, but it also tended to relieve the large amount of swelling there was in laryngitis.

Mr. BUTTERS thanked Mr. Hunting for the paper, and said he considered throat affection the most frequent form of disease there was with horses. He did not know whether they could very well differentiate the forms of disease, as one horse might be ill four or five days whilst another might suffer four or five weeks, and look both alike at the start. With regard to the treatment for sore throat each case should be treated on its own merits. He had a great faith in blisters and he had seen good effects from them. If a reliable servant was kept no doubt hot fomentations were good; and also cold would be bene-

ficial in producing good effects. The administration of drugs was always dangerous, but the administration of something in the shape of a gargle had good results.

Mr. MACKINDER remarked that he had as many cases of affection of the throat as anything at the present lime. Of anthrax he had seen three horses affected. There was a tremendous swelling, but there was absence of the pain they might expect. It was very much like blood-poisoning in the throat. He much preferred blisters, and if they came to the question of putting a stocking round the throat in some parts it would never get applied. In a case he was attending now he found it was no use trusting to the men so he had to do it himself.

Mr. HOWSE pointed out the utility of a poultice to the horse's throat with a flannel collar in the shape of a kite. Medicines of any kind but an electuary were very dangerous indeed. He used small doses of calomel and nitrate of potash with good effects, and he believed they had also a good effect on the digestive organs, for directly they got health the throat difficulty soon disappeared.

Mr. GRESWELL said he had several cases of fistula of the parotid gland, and a cold application was good as a stimulating dressing.

Mr. HUNTING replied, and said one thing he thought they had elicited—an almost practical unanimity in favour of blistering. He believed if certain facts were recognised all round it was not a bit of good trying to explain why or how, or deny that fact, because one could not explain why or how. He accepted the fact that blistering must be good. Captain Russell had agreed with him that contagion was a much more frequent cause for cold than anything else, but he was not quite so sure as Captain Russell was as to its resulting from a horse coming to a hot stable. If they turned a horse out of a hot stable that never gave it cold. One thing went in favour of blistering—it was so much easier than poulticing. It rather led one to think there might be just a shadow of prejudice in favour of blistering because it was handier. Mr. Butters had said one horse was ill for five days and another for five weeks, and both started by exhibiting the same symptoms. He could not differentiate between the two, why one was ill five weeks and the other five days. They might put a blister on one horse and a poultice on the other. Perhaps a blister was put on the five days' case and a poultice on the five weeks. One failure or one success then governed them and gave them faith. They did those things and did not know why, and they kept the same groove all their life. Steaming with hot water had been referred to. He thought most of them had used it. If it was done he did not like a nose-bag, but to put a pail in front of a horse and let him steam himself. To use a nose-bag seemed to be a cruel proceeding. In anthrax which he had referred to a very rapid swelling was the only thing to guide them in diagnosis. In cases of swelling he advised them to avoid mustard if possible. As to roaring under chloroform he had found that it was the horses which took a very large dose to get them under which were so affected. He could make no suggestion as to fistula of the parotid. He congratulated the members on the excellent discussion they had had, and on the amount of information which had been elicited.

Captain RUSSELL proposed a hearty vote of thanks to Mr. Hunting for his paper, which had been a great treat to them all, and to which they had listened with great interest. He had very great pleasure in nominating Mr. Hunting as an honorary associate for election at their next meeting. This was seconded by Mr. Gooch, and carried unanimously.

The proceedings then terminated with a hearty vote of thanks to Mr. Howse for his conduct in the chair.

The Dinner.

The members present afterwards dined together. After dinner the usual loyal patriotic toasts having been duly honored, the health of "The President" was submitted by Captain Russell, and "The Visitors" by Mr. Freer, and received with enthusiasm, concluding the meeting.

J. A. ROBINSON, *Hon. Sec.*

WEST OF SCOTLAND VETERINARY MEDICAL ASSOCIATION.

THE annual meeting was held in the North British Hotel, Glasgow, on Tuesday, 31st March, 1896, at three o'clock. Mr. Thos. Campbell, Kirkcudbright, occupied the chair, and there were present Mr. Gordon Frew, hon. sec., Messrs. D. Hamilton, Hamilton; J. Wilson, T. Muter, Imnrie, Weir, Blue, Bishop, Jas. Pollock, and Anderson, Glasgow; N. Green, Irvine; McIlwraith, Milngavie; Begg, East Kilbride; Miller, Partick, Peddie, Cathcart; Robertson, Kirkintillock; Jarvie, Carluke; D. Allan, Clarkston; Campbell, Kirkcudbright, Dr. Jas. McCall; McNeil, Partick; Taylor, Cathkin; Wyse, East Kilbride. Visitors: Messrs. McL. Young, Dundee; and McIntosh, Dumfries. Students: Messrs. Palgrave, Reynard, and others.

The minutes of the last meeting were read and confirmed.

Election of Officers.

The CHAIRMAN: I hold the opinion that I held last year, that it is not desirable for the prosperity of the Association to constantly re-elect the same individual as president. I expect that you will relieve me of the office that I hold. I have no doubt you will appoint a better man from the hint given me here lately by Mr. Anderson. The nomination I refer to will, I am sure, be accepted, and it will doubtless be for the prosperity of this, the oldest Association in Scotland.

Mr. ANDERSON: This time last year when we nominated and elected the president it was understood that our worthy President would only occupy the chair for one year, as he had occupied it several times previously. He took the position once again in order that we should have time to select amongst our members one who would fulfil the duties of the position both socially and scientifically as our Association demands. I am glad to say that since that time we have found a doctor who is willing to officiate as our president, and as a medical man of character he will be the right man in the right place. I beg to propose that Dr. James M'Intosh McCall be elected as our president for the ensuing year.

The CHAIRMAN: I have great pleasure in seconding.

There being no further nominations, Dr. James M'Intosh McCall was duly elected president for the ensuing year.

Mr. ANDERSON: Mr. Frew's business prevents him undertaking the duties of hon. secretary any longer. As the president said of his office, I am of opinion that the honours should go round. I have, therefore, much pleasure in proposing Mr. Hugh Begg, of East Kilbride, to be our future secretary.

Mr. FREW seconded the motion.

There being no other nomination, Mr. Begg was unanimously elected.

Mr. ANDERSON: Hitherto the secretaries of this Association have found the duties not only onerous, but often difficult, more especially when they have to correspond with members, particularly so far as the recovery of subscriptions is concerned, as well as other matters, such as arranging for members to read papers. It has occurred to me that if we appoint an acting secretary outside of the profession altogether, he would have less fear in approaching the members for their subscriptions, at least, he would not be tied down with the

bonds of professional brotherhood, as we are in asking for annual subscriptions and arrears. I have taken the trouble to make enquiries among my friends in the accountant business, and find we can get a very able man to do the work for a nominal snm, and I leave the suggestion before you for your approval, or otherwise, as may be. I consider the suggestion a good one, because I know how difficult it is to act both as secretary and treasurer. The experiment would be worth a trial, at all events. That is, to appoint one man as hon. secretary and the other as acting secretary, who would take nothing to do with the scientific points of the Association, merely the business part, and assist, besides the hon. secretary, in minuting the business of our meetings.

New Members.

The CHAIRMAN: Before dealing with this matter we should have the nominations.

The following gentlemen were nominated:—

Mr. A. C. Forbes, Glasgow; proposed by Dr. McCall, seconded by Mr. Wilson.

Mr. Douglas, Kilmarnock; proposed by Mr. Frew, seconded by Mr. Anderson.

Mr. Robinson, Kirkintillock; proposed by Mr. Anderson, seconded by Mr. Peddie.

Mr. R. C. Robinson, proposed by Dr. McCall, seconded by Mr. Campbell.

Mr. Carmichael, Maybole; proposed by Mr. Frew, seconded by Mr. Campbell.

Mr. T. Hamilton, Glasgow; proposed by Dr. McCall, seconded by Mr. Wilson.

Mr. J. M. Dougall, Glasgow; proposed by Mr. Anderson, seconded by Mr. Hamilton.

Mr. White, Glasgow; proposed by Dr. McCall, seconded by Mr. Wilson.

Date of Meetings.

The CHAIRMAN: As regards the correspondence mentioned on the agenda on the table you will see a lot of letters—apologies for absence. In fact they all say that owing to the season of the year, the busiest time, they are all otherwise engaged and cannot attend, and I have almost come to the same conclusion myself, gentlemen, that about the end of March or beginning of April is a bad time for our meetings. Most of us have at this time brood mares to attend to, and very often, if the master goes away from the district about the time a mare is due to foal, it displeases his clients, and the numerous letters that have arrived bear out my view that the meeting might be earlier. However, we must intimate our sorrow that quite a number of gentlemen have not been able to meet us and have a social meeting. I hope that our newly-elected President will see to these matters better than I have done. Seeing we have now elected our friend and professor, Dr. McCall, I simply shall, with great pleasure, vacate the chair and allow him to try his hand this evening. I am sure—I knew his father long ago—I am sure if he follows his father's footsteps he will make a very good president, and bring the Association to the position it once held, not only the oldest in the West of Scotland, but one of the best for instruction in scientific work.

Dr. MCCALL: It gives me very great pleasure indeed to occupy this position, which Mr. Campbell has so long and worthily held, and it will take a very long time before I will be able to get into the way of office. At the same time, gentlemen, I shall do my very best, and if by doing that I am able to assist the Society in any way I shall feel only too delighted.

The Question of an Assistant Secretary.

Mr. ANDERSON: Might I ask you to put my suggestion before the meeting as to the acting secretary?

The PRESIDENT: Gentlemen, you have heard the suggestion Mr. Anderson has made, that we ought to have an acting secretary to relieve the hon, secretary of a good many of his onerous duties. It is a good suggestion, that might be tried for one year to see how it works.

Mr. CAMPBELL: I have much pleasure indeed in backing up Mr. Anderson's suggestion with all my heart. We may appoint an hon. secretary, but if you take into consideration, gentlemen, the amount of labour, the number of letters this individual has to answer as demonstrated on the table, it is too much to do for nothing, and I have for some time thought, as Mr. Anderson has stated, that if we could get an acting secretary to be principally guided by our President as to time of calling meetings, etc., it would be a good thing. I have much pleasure in seconding Mr. Anderson's proposition.

The PRESIDENT: Has any other gentleman anything to say on this matter?

Mr. BROWNLIE: I propose that we do not appoint an acting secretary. I do not think the duties are very onerous at all, seeing we only meet once a year. I think the correspondence is not so very great but our secretary newly appointed might overtake it, and I am sure he will overtake it.

The proposition was seconded, with the remark that the Association was getting fresh blood, and that the new secretary should manage to do the duties quite easily.

Mr. ANDERSON: I do not doubt but that the honorary secretary just appointed might be able to do all the correspondence and write up all the minutes as well as if he had been a chartered accountant, but what I want to say is this: he will find, as we have found who have occupied the position before, the great apathy shown by correspondents—the great reluctance shown to pay subscriptions when due. It is principally in the interests of the finance of the Society that I propose an acting secretary should be appointed. It is no disparagement to Mr. Begg's ability. It is to save him the disagreeable duty that will devolve upon him, to beg as if he were begging. That is not meant for a pun, gentleman. I would therefore strenuously ask you to support my suggestion.

Mr. BROWNLIE: The only reason advanced why we should appoint a lawyer is, I think, a very frivolous one. Do you think that because of a letter from a lawyer we will in fear and trembling pay up?

Mr. WEIR: To make matters perfectly clear, why is it that the treasurer's report is not before the meeting to-day? It ought to be before us, so that we might see how the finances of the Society stand—if there is any immediate requirement of funds. What does Mr. Anderson propose to do? When I was secretary I was very glad to get a subscription when it came, and if it did not, good and well.

Mr. ANDERSON: We are in the unfortunate position of the treasurer not turning up. In fact, the treasurer did not take office; the secretary had to officiate during the past year. The secretary will be able to let you understand how the funds of the Society stand.

Mr. WEIR: Are we in funds or are we not?

Mr. ANDERSON: We are in funds, Mr. Weir.

Mr. WEIR: I have much pleasure in supporting the amendment made by Mr. Brownlie. And if there is any falling off in the membership, it is simply because we have made our fee far too large. My idea would be this—make your subscription five shillings a year.

Mr. ANDERSON: It is that already.

Mr. WEIR: Very well. When it was ten shillings, I remarked then was the time we found it difficult to get in subscriptions.

The PRESIDENT: The amendment is that we do not appoint a secretary other than Mr. Begg. That is, Mr. Begg acts as honorary secretary and treasurer, and does all the work.

The vote was taken, and the amendment was carried by a narrow majority.

Mr. CAMPBELL: I beg to propose Mr. McFarlane, of Greenock, as one of our vice-presidents.

The proposition was seconded.

Mr. ANDERSON: I propose Mr. Peddie as our other vice-president.

The proposition was seconded.

Mr. FREW proposed Mr. Anderson as auditor, and the PRESIDENT proposed Mr. Dan Hamilton to act along with him, and these gentlemen were appointed.

Mr. J. M'LAUCHLAN YOUNG, M.R.C.V.S., Dundee, read the following paper on "Tuberculin Testing":—

Tuberculin—a pure cultivation of the *Bacillus tuberculosis*—did not, unfortunately, prove what Professor Koch anticipated, but, in the hands of medical men and veterinary surgeons, has become, instead of a curative, a most valuable diagnostic agent. I do not pretend to be able to give you an exhaustive paper on the subject, but have put together a few notes of cases and thoughts suggested thereby.

The *modus operandi* is very simple, the chief point being to have everything conducted under strictly antiseptic precautions. Having selected the subjects, I make a weak solution of Jeyes' fluid in a basin, and wash an area of about two feet round the dewlap of cows or heifers, or behind the shoulder in bulls. I choose the latter position in bulls because the skin is not so thick, and it is thus easier to insert the needle. The instrument I use is the ordinary hypodermic syringe used in human practice, and with this I inject from forty to sixty minims of tuberculin fluid, according to the age and size of the animal. When it can be arranged, I prefer to make the injection in the evening, as it is more convenient to take the temperature next day; and, the animals being undisturbed during the night, the reaction, if any, is more reliable.

The first step before making the injection is to note the normal temperature, and, in this respect, I have had considerable difficulty amongst the "blacks" of Aberdeenshire. So frequently did I meet with animals the temperatures of which were 102 or 102 2-5ths, that I had at last to accept this as the normal, especially in cows. In one case in particular, a cow—a regular piner—condemned to be killed, I found the temperature 103 2-5ths, but from curiosity made the injection. Before she was killed the temperature rose to 106 1-5th, and on *post-mortem* examination she was found to be badly affected on lungs and pleuræ. This seems a curious case, as the instructions laid down by scientists provide that the temperature be normal for the success of the experiment. I certainly expected nothing definite, and only tried the experiment from curiosity, as I knew the animal would be killed next day, and I would have an opportunity of verifying the result. I need not take up the time of this meeting reading the notes of all my cases, but rather let me mention one or two out of the usual run, and thus more interesting. An aged cow coming to the calving was tested, and gave no reaction. Some time later she gave birth to an extra fine bull calf, but, unfortunately, she went down after calving and was unable to rise. After ineffectual treatment she was killed, and examination of her lungs revealed a mass of tuberculous matter enclosed in a sac, resembling cases of encysted pleuro-pneumonia I saw when at college. I know the mass was tubercular, because I was enabled to

demonstrate the bacilli under the microscope. This mass must have been in existence when I tested the animal, and obtaining no reaction leads me to theorise that in this one case, at least, tuberculosis is capable of becoming encysted like pleuro-pneumonia. Remembering the teaching that encysted pleuro-pneumonia was always a dangerous source of infection, I ask if this case would be a more prolific source of infection than an ordinary one? I think not; and feel inclined to go further and say the flesh of such an animal would be perfectly safe to use as food, for, had any tubercular contamination been in the muscles or glands, the tuberculin would have revealed it.

The calf I tested when it was three months old, and found it free; but, as the owner fears it will develop the disease, I have an engagement to test it again.

That the owner may not be very far wrong, I give a case in point. Last June I tested a bull calf, dropped from a cow which when tested gave no reaction, and found it—the calf—free. I again, at the request of the owner, tested it in February last, as its sire had in the meantime reacted to tuberculin, and found the stirk gave the characteristic reaction. From experience we know that tuberculosis exists in the herd, and this bull, being calved with the predisposition, presented a very suitable medium for the development of the bacilli when they gained entrance. This case emphasises the theory that only the predisposition is hereditary.

I have had several opportunities of examining carcases of animals which when alive reacted, but have only had the chance of examining two bullocks *post-mortem*, which, when tested, gave no reaction.

In all the cases where I have had the chance of verifying the result, tubercles were found when the fluid gave the elevated temperature, or, as in the two bullocks, nothing was seen when no reaction was obtained.

That is my answer to the oft-asked question—is tuberculin reliable?

The instructions given for conducting the experiment say that, if affected, the temperature rises from two to three degrees within twenty-four hours, and my experience has been that, at the fifteenth or sixteenth hour, the temperature is highest, and falls gradually from then onwards. So invariable have I found this, that I now make my second visit at that time; and if I find the temperature elevated, and from the record kept by the cattlemen know the rise to have been gradual and steady, conclude the animal is affected.

The successful use of tuberculin is the strongest argument we can use to induce those in authority to place tuberculosis under the Contagious Diseases Act, as, when they refused, the reason given was dubiety in the diagnosis. Now, thanks to Professor Koch, we can diagnose with certainty 99 per cent. of cases. At least, that has been my experience.

Having now so far solved the question of diagnosis, the problem is how best to use this for some practical purpose, and suppress this dire disease. At present, tuberculin is of considerable commercial value to dairymen, as I am convinced that, if a dairyman could advertise that he has had all his cows tested, and sell his milk with a guarantee to be free from tubercular contamination, he would receive from 1d. to 3d. per gallon more than in ordinary circumstances.

Professor WILLIAMS has recommended city authorities to boil the flesh of tuberculous animals, and sell it at a reduced price to the poor of our towns, knowing that the process of boiling kills the *Bacillus tuberculosis* and all contamination, and thus renders the flesh safe to use as food. Of course, this means that tubercles and affected parts be first removed.

Taking advantage of this, some scheme might be devised and undertaken by Government to gradually suppress this most serious scourge. Professional gentlemen might be appointed to test, by means of tuberculin, the various herds throughout the country, and whenever an animal in good condition gave

the reaction, it should be treated according to Professor Williams' recommendation—any animal in poor condition or cow coming to calving, being isolated until such time as was suitable for its disposal. The scheme would necessarily require the hearty co-operation of the stockowners themselves, as it would be essential to use only bulls that had been tested and found sound. In many instances the sacrifice would be great, but in time the results would be worth it.

What with the danger of milk conveying the disease to human beings—especially children—the outcry against tubercular meat, and the destruction wrought in some of the most famous herds, the suppression of tuberculosis is undoubtedly the problem of the day; and although, by these notes, I make but a feeble attempt to solve it, I have at least given some food for reflection, and trust the outcome of this meeting will be another link in the great chain which will some day completely surround and destroy this bovine scourge—tuberculosis.

The PRESIDENT : Gentlemen, we have all listened, I am perfectly certain, with very great pleasure indeed to the paper which Mr. Young has given us. It ought to be of interest to each member of the profession, and more especially to those members whose *habitat* is in the country. In all the farms round about, in its various forms, tuberculosis is more or less prevalent, and it is to the advantage of the farmer in many instances to have his stock tested, so that when breeding, he may not breed with animals which are affected with the disease. Mr. Young tells us very clearly what his idea is of tuberculin as a diagnostic agent, and I would like to hear to-day the experience of other members of this society as to practical utility. When tuberculin was first upon the market a number of years ago, we found at that time that the test was not, by any means, a satisfactory one. We had an animal affected with the disease, and in good condition, tested with tuberculin. It gave a characteristic reaction, but alongside of the animal we put another which to all outward appearance was also affected with the disease, and tested it. The result was that its temperature rose also. We killed both animals, and found one affected and the other not, although tuberculin had given almost an identical reaction in each case. But within the last few years that state of things has practically disappeared. It is not out of the way to say that 99 out of 100 of the animals which react from tuberculin, *on being killed*, are found to be affected with the disease. That is as near as it is necessary for us to have it. There is always this point in connection with tuberculin testing, that is, if the animal tested is to all appearance in good health, and reacts to the tuberculin test, you can have the animal slaughtered, and have an examination by properly experienced men. If the carcase is passed, then the farmer's loss will be very slight. If the animal is bad and will not be passed, he will always draw the price of the hide to pay the expense of sending the animal to the slaughter-house. One case very much in point was this. Four animals were kept by a gentleman for the use of the family—the milk was supplied to the household, and all these four animals were to all appearance healthy. I was asked to examine these cows as the owner wished to know whether they were free from tuberculosis. On physical examination nothing the least suspicious was to be made out in any one of the four. However, I advised that all four should be tested with tuberculin before giving a positive opinion. This was done, and about a week later I got a note from the owner, saying that out of the four, three had responded to the tuberculin test. Their temperature had risen from three to four degrees. I advised him to have these three animals slaughtered, which was done. The report given me by the veterinary surgeon who made the *post-mortem* examination was that two out of the three were found to be affected slightly with tuberculosis in their lungs. The other cow

showed no lesions in the lungs, but the presumption is that in all probability there was in some parts of the body one or two small centres of tuberculosis which might have been found if carefully sought for.

Mr. CAMPBELL: We have just listened to an admirable paper, well written by our friend, Mr. Young, most pleasantly delivered. After listening to that paper, one cannot help coming to the conclusion that we have nothing to do but get this wonderful instrument, and inject tuberculin into the system, to know whether an animal is suffering from tuberculosis or not. I have used tuberculin, and I think it was from the same firm of chemists mentioned by Mr. Young. In autumn of 1893 and 1894. I took careful note of the cases I operated on, and I tell you the results were not entirely satisfactory. My experience had gone thus far that I proved to a demonstration that when an animal is thoroughly affected with tuberculosis, when the virus is widespread throughout the whole system, tuberculin is no test whatever. I ask you to look up the report of the Royal Commission appointed by Government. Some of the most experienced bacteriologists were appointed by Government to make minute and careful experiments on the use of tuberculin, and give their advice as to how to eradicate tuberculosis. I would ask you not to go from this meeting with the idea that every reaction you get from the use of tuberculin is certain.

Mr. ANDERSON: My little experience is this. At first I was a great convert to tuberculin. Latterly I got suspicious of it. Now I believe greatly in it to a modified degree. There are three conditions in which it is apt to mislead you: (1) when the disease is in an arrested stage; (2) when the disease is too far advanced; (3) when you have complications of other disease. No doubt it is very valuable in an acute or primary stage of tuberculosis. I would, however, be very chary to accept it as an infallible test in a valuable stock, so that while I believe in it as a test, I do not think its praises should be sung too highly, because I am afraid it would be very dangerous to the farming community at large.

Mr. ALLAN: I practise pretty extensively amongst Ayrshire cattle. The majority of the stocks are generally healthy. I have found in all that I have tested, over 70 per cent. of them are affected, if you rely on the tuberculin test. I may say that it was only out of curiosity of the owner and myself that these were done. In batches of ten, I have seen as many as six react. If I had had the opportunity of seeing the *post-mortems* of these, I could, perhaps, speak with more confidence on the subject. It is a serious matter, however, if you are going to condemn 70 to 80 per cent. of the Ayrshire cattle.

Mr. BEGG: I must, I think, sing the same song as Mr. Young, as I have found tuberculin very effective, and I am, perhaps, trusting it too much. However, I completed my experiments very carefully, and in the first stock I tested, fully 90 per cent. of the animals reacted, but you have to remember that in my district tuberculosis is pretty rife, and in the previous nine months, six animals had been lost to this stock from tuberculosis. With fresh tuberculin three weeks later, I re-inoculated five of this stock, and the result of the second experiment was the same as the first, in both the reacting and non-reacting subjects. There was this difference, however, that the reaction was not so great to the second experiment, and it is a point to be remembered. We killed one of these five animals, a three-year old, twice condemned, and probably the healthiest-looking animal in the stock. The *post-mortem* examination revealed two centres of disease in the right lung, and also tubercular infiltration of the bronchial glands. With regard to the quantity of tuberculin required. I first, like Mr. Young, used from 30 to 60 minims, but latterly I have only used 15, and get the reaction just as well. I always get the highest reaction about the ninth to eleventh hour. Some of them were

as high at the sixth, but I found on an average it occurs from the ninth to eleventh hour. It is a good plan to inoculate animals at night. You have the advantage of the work of the byre being finished for the day, and so reacting animals have less risk of a chill while in the febrile stage. In our district it is not so much a matter of testing for breeding purposes, as the use of tuberculin is somewhat limited to the aid which it affords us when examining newly bought animals as to soundness. Just now, I may say, I have a newly-bought cow under treatment which persistently refuses all kinds of food, and I can find nothing the matter except a degree of biliousness and a little pain over the region of the liver. This animal reacted two degrees to tuberculin. I can find nothing wrong with her lungs. The question is, "Should she be condemned as tubercular?" I do not wish the opinion of those gentlemen who have denounced tuberculin, though their experiments were not completed by *post-mortem* examinations.

Mr. ANDERSON: This is a complication. I do not think tuberculin deserves the infallible name it has got. You, yourself, will admit that it is not infallible.

Mr. BEGG: That may be, but it should not get such a severe blow as some of you have given it. I guarantee to those present who have not tried it that they will get good results, and I have inoculated upwards of 30 to 40 single cases. I have seen eight to ten *post-mortems*, and I have never been disappointed with it once.

Mr. GREEN: I have inoculated 200 animals, and found in our Ayrshire stock 70 to 75 per cent. responded to the tuberculin test. I inoculated in the evening, and went out in the morning and had them examined. They responded as high as 107 and 108 degrees. I inoculated the stock of a farmer in the district who has had every year these last three years "casting of the calves." Out of 23 cases 21 of them responded to the inoculation.

Mr. MCINTOSH (Dumfries), after a call from the chair: I am here, sir, as a stranger with a tremendous appetite for information. I have not had sufficient experience of tuberculin to give any information that would be reliable. I would rather listen and hear the subject well discussed.

Mr. WEIR: I have listened, first of all, with pleasure to the paper so admirably read by Mr. Young. I think the subject could not have been better handled. It gives us room for some little discussion, and perhaps you would allow a town practitioner just to say a few words. I would be inclined to say nine out of ten cases acted upon have given positive results. The positive results given by Mr. Young are much more full than any of the continental practitioners can arrive at. It is admitted you have animals that react, and on *post-mortem* examination show no traces of tuberculosis. Mr. Anderson might have added another condition—specific fevers. May it not be that those subjects that reacted had the first stage of tuberculosis, and on *post-mortem* examination gave no sign of it. The injections of tuberculin have a curative effect, if they were gone on with for a time. You may, for instance, have a reaction for a first time, then you are called back a year afterwards you find that some that reacted the year before did not react the second time.

Mr. YOUNG, replying generally to the discussion, said Mr. Campbell spoke about tuberculin being no test in an advanced case. In the one isolated case he spoke of, it was made out of curiosity more than anything else. I would not expect to find a temperature as high as 106 again. As regards the instrument I use, it is an ordinary hypodermic syringe as used by medical men, and solution a weak solution of Jeyes' fluid. I never had a single case of collapse. I may safely say this, gentlemen, that it seems to me the consensus of opinion in this meeting is that tuberculin is a reliable test, with the one exception of Mr. Campbell. Others certainly have given their

objections, but only in a very few cases had they seen a *post-mortem*. It has been argued that reaction takes place in animals that to all appearance are healthy. At certain stages of the disease animals never looked better, indeed, it is well enough known that human beings badly affected with consumption sometimes look the very picture of health. You find identically the same thing in the lower animals. In my paper and in the remarks of the President you got positive facts. You have an opportunity of examining the carcases after the inoculation, and our remarks should surely stand before those not so supported. Perhaps we are going too far when we say that in 99 cases out of 100 the reaction is reliable. That may be; but in every case where I got the reaction I got my results verified. My experience certainly is that I diagnose with surety in 99 cases out of 100. Mr. Anderson mentioned three stages, and I thoroughly agree with Mr. Anderson in a good many of the points he urged. I thank you very much for the very kind way in which you received my paper.

A vote of thanks was awarded Mr. Young, it being understood that the discussion of tuberculin would be resumed at the next meeting.

Mr. CAMPBELL read an interesting account of a case of fracture of the pelors without displacement for a time, and exhibited the specimen,

Dinner.

The members and visitors then adjourned for dinner, after which the usual loyal toasts were proposed.

Between the toasts songs were sung by Messrs. McCall, Muter, Brownlie, Neil, Taylor, Wyse, Begg, and others.

The meeting was one of the most successful the West of Scotland V.M.A. has had.

THE NATIONAL VETERINARY ASSOCIATION.

THE fourteenth general meeting of the Association was opened on Wednesday, 8th ult., at the Royal Assembly Rooms, Great Yarmouth. It is the practice of this influential society to hold an "annual moveable" conference, and their first visit to this part of the country was by invitation of the Eastern counties V.M.S., of which Mr. W. Shipley is president, and his son (Mr. W. Shipley, Junr.) the active secretary. These gentlemen reside at Yarmouth, and aided by a strong Provisional Committee of members from all parts of the district, the arrangements made under their superintendence were complete in every detail. The president for the year—Mr. William Bower, of East Rudham, took the chair, and there were present, Professors Almond, Chelmsford; McFadyean, London; Messrs. W. Hunting, F. W. Wragg, London; R. C. Trigger, Newcastle, Staffs.; Clement Stephenson, Newcastle-on-Tyne; H. Kidd, Melton Mowbray; W. Shipley sen., and junr., Yarmouth; W. A. Taylor, E. Faulkner, Manchester; J. H. Carter, Burnley; J. Hammond, Bale; J. R. Green, Alfreton; E. J. Crowhurst, Deddington; A. W. Mason, Leeds; W. Woods, Wigan; J. E. Scriven, Tadcaster; T E. Auger, Wymondham; A. S. Auger, Saxmundham; G. C. Hunting, Stalham; Mr. D. Pugh, Sevenoaks; J. Simpson, Maidenhead; W. H. Bloye, Plymouth; W. Awde, Stockton-on-Tees; W Handcock, Uxbridge; F. B. O. Taylor, Weston; F. Case, Swaffham; J. D. Overed, Blofield; Captain F. Raymond, A.V.D.; T. A. Huband, Cheltenham; H. Buckingham, Harleston; W. M. Reeman, Woolpit; J. Pollock, W. R. Mills, Norwich; R. Hughes, Oswestry; J. A. Clarke, March; J. McGavin, Montgomery; F. M. Wallis, Halstead; R. G. Gillard, E. A. Hudson, East Rudham; J. Rowe, Marylebone; and Mr. G. Heatley, Woodbridge. At the subsequent discussion on swine fever, it should be added, Mr. J. A. Hempson

representing the Executive Committee for Suffolk) was present by invitation.

After the report of the Council had been received, it was resolved, on the motion of Mr. HUNTING, seconded by Mr. KIDD, that the next year's meeting be held at Reading.

Amidst applause, Mr. Jas. Simpson, of Maidenhead, was elected president for the ensuing year. It was stated that this gentleman had just relinquished the reins of office as president of the Royal College of Veterinary Surgeons, and, in returning thanks for the compliment now paid to him, Mr. SIMPSON said he would endeavour to follow in the footsteps of his distinguished predecessor.

The following elections were then made:—Vice-presidents, Professor McFadyean, Mr. J. H. Carter, Mr. F. L. Gooch, Mr. W. Shipley, Mr. J. S. Hurndall, and Professor Penberthy; life vice-presidents, Mr. J. M. Parker and Mr. John Malcolm; members of the Council for 1896–7, Mr. W. Hunting, Mr. W. Wilson, Berkhampstead; Mr. R. Roberts, Tunbridge Wells; Mr. S. Villar, Harrow; Mr. W. Carless, Stafford; Mr. J. P. Walker, Oxford; Captain R. Butler, A.V.D.; Mr. J. E. Kitchen, London; Mr. H. G. Lepper, Aylesbury; Mr. Prudames, Berkhampstead; Mr. F. G. Samson, Mitcham; and Mr. W. J. Mulvey, London. The treasurer (Mr. F. W. Wragg) and the secretary (Professor Macqueen) were re-elected.

The PRESIDENT, in his opening address, then offered a hearty welcome to members of the Association on their first visit to the Eastern Counties, and said that at such a time he felt doubly proud of the high position to which he had been elected. With reference to the papers that were set down for discussion, he pointed out that swine fever and tuberculosis were two of the most important subjects that came within the whole range of veterinary practice, seeing that they affected the farmer, dealer, butcher, consumer, and tax-payer. The time had come, he claimed, when science and knowledge enabled the veterinary profession to say how the two diseases could be met, and the transmission of the germs of tuberculous inoculation to human beings prevented. In this connection, he referred to the position of veterinary surgeons, and congratulated the members of the Association upon the fact that they now stood on a better footing with the Board of Agriculture than was the case a few weeks ago. They had got the veterinary department restored, with proper authority and responsibility, and, by continued pressure on the Board above, they would be able, he hoped, to secure veterinary appointments in future to members of the profession. With regard to meat and dairy produce, he maintained that the proper inspector was the veterinary surgeon. He was the fittest person to judge of the sanitary condition of meat and milk, as he was daily in contact with healthy and diseased animals. Amateurs were costly and dangerous where the health of man or animals was concerned, and the functions of the lay inspector should be simply to carry out the directions of the medical officers of health or the veterinary inspectors. The public had greater faith in the knowledge of the veterinary surgeon than was generally supposed, and he believed that stockmen certainly would fully appreciate their services for the prevention as well as the cure of disease.

Professor J. MCFADYEAN, of the Royal Veterinary College, presented an exhaustive paper upon swine fever. With regard to the etiology of the disease, he said it was one which in natural circumstances was transmitted to no other animal than the pig, it was caused by a microscopic germ—the swine fever bacillus—and the essence of infection was the mediate or direct transference of this germ from a diseased to a healthy pig. Probably all cases of natural infection took place by the injection of bacilli, voided from the intestine of a previous subject of the disease, and there could hardly be a doubt that this infection was nearly

always direct. Sometimes the disease might be spread by human beings and other intermediary agents, but the all-important factor in the diffusion of swine fever was the sale of apparently healthy pigs that had in reality received the infection, or were actually suffering from the disease in a mild form. The period of incubation varied. Susceptible subjects infected with a large quantity of material might show symptoms of illness on the following day, and be dead within forty-eight hours. This would be an extreme case in one direction however, and yet another extreme was seen in cases where pigs contracted the disease and recovered from it without ever exhibiting any symptom that would lead an ordinary observer to suppose that they were not healthy. As a rule, however, a pig infected with swine fever would, in about eight or ten days, exhibit symptoms of ill-health sufficiently pronounced to attract the attention of an attendant. The symptoms were described in detail, these not being sufficiently definite to admit of compression within a few lines; the professor gave the resultof twenty *post-mortem* examinations, and he frankly admitted that the detection of swine fever during life was often difficult and not infrequently impossible. The practical conclusions of general interest was comprised in the final paragraphs. "The machinery which the Board of Agriculture has put in motion is probably yielding the best results of which it is capable, and the main cause of failure is the unexpected difficulty in following up the sources of infection and in diagnosing the disease in the living subject. This difficulty can be met only in one way, viz., by imposing severe restrictions on the movement of pigs in every district in which swine fever is known to exist. Up to the present such restrictions have been imposed only in a partial and tentative manner, and that is the chief hole in the net with which the Board has been fishing for swine fever. One can imagine what an outcry would be raised by owners, breeders, and dealers if restrictions, adequate to the end in view, were introduced in each of the counties in which the disease at present exists, but unwillingness to face that outcry is no justification for continuing a policy that is manifestly futile, and yet enormously expensive. The time has come for letting those who are interested in the breeding and rearing of pigs know that they must chose between submitting to severe restrictions on movement and abandonment of the efforts to stamp out swine fever. By way of encouraging them to choose the former alternative, I think we may confidently predict that if they will submit for a time to the declaration of wide infected areas, and to restrictions on movements within those areas such as are prescribed in the Infected Areas Order of April last, the disease will be stamped out in a comparatively short period."

An interesting discussion was opened by Mr. Clement Stephenson, the well-known breeder and exhibitor of fat cattle, and continued by many other members. Several speakers expressed an opinion that the Board of Agriculture were spending a vast amount of money in attempting to cope with the disease, and that their methods were best calculated to spread it. Slaughtering was declared to be ineffective, and the general opinion was in favour of restricted areas of large size.

Prior to the adjournment for luncheon, the Mayor of Yarmouth (Mr. T. A. Rising) came into the room and addressed a few words of welcome to the Association on their visit.

In the afternoon the discussion was taken up by Professor Almond, of Chelmsford. He dwelt upon the long duration of the disease, and showed that it was consequently necessary to continue the restrictions in any area for a long period. The strict regulations for the rinderpest were almost required in order to exterminate swine fever. The general conclusion was embodied in a brief resolution to the effect that the members were satisfied that without the imposition of severe restrictions of movement

in every district in which swine fever existed, the disease would never be stamped out. The rest of the afternoon was spent in debating a valuable paper by Professor Almond, upon "A practical method of gradually, effectively, and cheaply reducing bovine tuberculosis to manageable proportions, and ultimately stamping it out."

The annual dinner of the Association was held in the evening at the Royal Aquarium; and on Thursday an excursion took place on the Norfolk Broads, and luncheon was served at Wroxham.—*The Norfolk Chronicle.*

To Mr. Huish's large display of new instruments most of the members paid a visit.

The Revelation Incisor Pressure Mouth Speculum, exhibited on a horse's scull, well demonstrated its extreme utility.

The Huish-Blake original patent Castrator was the centre of attraction, and the large number of animals castrated by it, as testified by well-known men, goes to prove its popularity. Reply post-cards, all alluding to its work in the highest terms, and giving the number of animals operated upon, were received by the patentee during the meeting, and were duly posted on his stand.

The now well-known "progressive" metal cases of various M.D. Instruments, Neurotomy Sets, Foot Knives, Scalpels, and Emergency Cases, were highly attractive and much admired, as were the reversible patent double-cutting Tooth Rasps.

Tooth forceps and shears of the newest designs were to the front, and the Metal Hypodermic Cases, with syringe, and pellet, or solution tubes, were the acme of compactness.

Bern's patent Moss Fomentation Pads and Jackets, for which Mr. Huish has been appointed sole agent for this country, appear to be extremely useful in chest affections; and poultices, so important do they seem, that we purpose giving a further notice of them in a future number.

CONTAGIOUS DISEASES ANIMALS ACT, 1894.

Summary of Returns of Outbreaks, for the three weeks ending July 18th, 1896.

England and Wales.

Pleuro-Pneumonia.	Swine Fever.	Glanders (including Farcy)	Rabies.	Anthrax.	——
None	Outbreaks confirmed 257 Slaughtered, diseased, or exposed to infection 4,289	Outbreaks confirmed 49 Animals reported during the three weeks attacked 75	Cases in dogs reported 30 Other animals destroyed, as having been exposed to infection 17	Outbreaks reported 19 Animals attacked 38	

Glanders in London—43 outbreaks, 63 cases.

SCOTLAND.

Pleuro-Pneumonia.	Swine Fever.	Glanders (including Farcy).	Rabies.	Anthrax.	——
None	Outbreaks confirmed 9 Slaughtered, diseased, etc. 113	Outbreak confirmed 1 Animals attacked 4	None.	Outbreak reported 2 Animals attacked 7	

IRELAND.

None	Outbreaks confirmed 38 Slaughtered as diseased, etc. 245	Outbreak confirmed 1 Animal attacked 1	Cases in dogs reported 28 Other animals 26 Animals destroyed, etc. 34	None	

SCIENTIFIC FARRIERY.

AN article appears in the *American Cultivator* devoted to the above subject. We are sorry that space forbids its entire reproduction. However, a few quotations will show that writers in the States on this subject are about as helpful as many of those who tackle it in this country, and, as usual, the writer who is going to teach another man his trade begins by abusing him in good set terms. If at the same moment I was asked to mention a topic to illustrate the stagnation of the same science, unambiguously and decisively would I endeavour to point out the inadequacy of the average shoer.

He is too stubborn to fathom and too ignorant to excogitate the scientific principles of farriery. Therefore, owners and trainers should regard the question as of great importance, and give it their devoted and vigilant attention, since by proper shoeing it has been evinced that animals not only perform at a faster rate of speed, but the percentage of lameness is reduced to a minimum, thereby prolonging the earning capacity of the horses, whether they are used for track, road, or draught purposes.

Several writers have contributed valuable hints upon shoeing. Robert Bonner, Professor Roberge, and R. Boylston Hall are indeed promulgators of ripe fruit for the critical students of farriery; but from ignorance of the formation of the motor power of the horse, and inability to comprehend the simplest rules of farriery, some horsemen continually execrate the practical theories of these eminent connoisseurs. We must commence at the bottom of a study to develop a thorough and practical knowledge of it. The bottom of scientific farriery is a thorough knowledge of the anatomical construction of the feet and legs, and the evils produced by the effect of an excessive growth of horn beneath any portion of the coffin-bone. Thus informed the insipidity of such articles will have ceased, and the reception for such information will have increased.

The proportionment and equipollency of the feet are indispensable elements in farriery for the well-being of the feet and legs, and the immutable production of a perfect and rhythmical gait. The slightest deviation from the proper medium in preparing the feet may excruciate the animal and incite calamitous

injury to his motor power. It may be the predisposing cause of corns, quittor, compression of the bones, sand cracks, contracted heels, thrush, speed cracks (so called) in trotters, &c.

Each disease has a just cause for its development ; but from lack of space suffice it to mention the cause of corus—the most common ailment in the feet of our horses. A corn is produced by an immoderate amount of horn on the bottom of the foot, which pushes the bones up out of their natural positions and into the coronet. This necessitates an excessive tightness at the place. The blood makes its passage into the foot, but cannot get out again, owing to the tightened condition of the coronary band ; in consequence the capillaries become congested and ruptured, and then a small amount of blood escapes, In course of time the permeation of extravasated blood changes the character of the horn in the immediate vicinity ; a horny tumour develops or the soft tissues suppurate, causing the disease to spread.

Every horse should be shod level ; but what is the true conception of this rule ? It does not imply, according to the common supposition, that the foot alone should be perfectly level, nor that each heel should measure exactly the same distance from connection of wall and flesh to surface lay, nor that the sides of the foot should be correspondingly level from the heels to centre of foot at point of toe.

The feet should be so prepared that the articulation will be correct throughout the entire system of joints in the feet and legs ; then, and not until then, the horse will be shod level. Horses possessing a faulty, or at least peculiar, conformation require certain portions of their feet to be pared from 1-16th in. to ¼in. (or even more in rare cases) lower than other points of the feet, in order to get the junctures of the bones mechanically true.

A foot should be in proper proportion to the size of the horse, and balanced so that the articulation will be correct in all the joints of the legs. A foot may be in proportion and still remain unbalanced—that is, it may contain a correct number of cubic inches, but the amount of horn at certain points may be too excessive to comply with the laws of nature, while at other points the growth may be insufficient. It requires the eyes of an expert in balancing the feet of horses possessing a peculiar conformation. No certain rule can be adopted for this purpose since the couformatiou varies in different horses, but the writer will submit a rule, absolute and invariable, for proportioning the foot, which a novice can put into practical use. The depth of centre in front of foot should measure about 80 per cent. of its diameter, and this measurement should be 2⅔ times the depth of the heels from coronary band to surface lay, or figures very close to these.

ANIMALS' ILLUSIONS.

A CURIOUS instance of animal illusion, says the *Spectator*, was seen on the Thames at the beginning of the week by those on their way to Henley by river. A cock swan was fighting his own reflection seen in the window of a partly sunken house-boat, which acted as a looking-glass. He had been doing battle for some time in defence, as he supposed, of his wife and family, who were grouped together close by, and had apparently begun to have some misgivings as to whether the enemy were real or not, for at intervals he desisted from the attack, and tapped the frame of the window all round with his bill.

Birds are, perhaps, more commonly the victims of illusions than other animals, their stupidity about their eggs being quite remarkable. Last year, for instance, a hen got into the pavilion of a ladies' golf-club, and began to sit on a golf-ball in a corner, for which it made a nest with a couple of pocket-

handkerchiefs. But many quadrupeds are not only deceived for the moment by reflections, shadows, and such unrealities, but often seem victims to illusions largely developed by the imagination. The horse, for instance, is one of the bravest of animals when face to face with dangers which it can understand, such as the charge of an elephant or a wild boar at bay. Yet the courageous and devoted horse, so steadfast against the dangers he knows, is a prey to a hundred terrors of the imagination due to illusions—mainly those of sight, for shying, the minor effect of these illusions, and "bolting," in which panic gains complete possession of his soul, are caused, as rule, by mistakes as to what the horse sees, and not by misinterpretation of what he hears. It is noticed, for instance, that many horses which shy usually start away from objects on one side more frequently than from objects on the other. This is probably due to defects in the vision of one or other eye. In nearly all cases of shying the horse takes fright at some unfamiliar object, though this is commonly quite harmless, such as a wheelbarrow upside-down, a freshly felled log, or a piece of paper rolling before the wind. This instantly becomes an "illusion," is interpreted as something else, and it is a curious question in equine neuropathy to know *what* it is that the horse figures those harmless objects to be. When Russian ponies first began to be shipped to Harwich they usually objected to pass near a donkey. This reluctance was explained on the hypothesis that the ponies seldom saw donkeys in Russia, and mistook them for bears; but that is hardly an illusion which is the effect of a mental misinterpretation of outside phenomena.

"Understanding," or investigation to that end, does often remove these equine illusions. Young horses can be led up to a sack lying on the ground, and induced to pass it, by letting them *smell* it, and find out that it really is a sack, and not the Protean thing, whatever it may be, which illusion conjures up for them. Once the writer saw a very quick and pretty instance of experiment by touch made by a frightened pony. It was being driven as a leader in a pony tandem, and stopped short in front of where the rails of a steam tramway crossed the road. It first smelt the near rail, and then quickly gave it two taps with its hoof. After this it was satisfied, and crossed the line. On the other hand, a donkey always tried to jump the shadows of tree-trunks on the road, though a similar experiment of touch would have shown that these were as unreal as the tram-rail was substantial. Lastly, no horse which has once knocked its head against the top of a stable doorway seems able to get rid of the illusion that there sits up in the top of all doorways an invisible something which will hit him again next time he goes through. Hence the troublesome and sometimes incurable habit of horses "jibbing" when taken out of the stable. This is an obvious instance of the disadvantage at which most animals stand in regard to means of physical experiments. The horse, for instance, need only *feel* the lintel to find out that it is fixed and does not move, and is not alive and waiting to hit him. But except his lips, which are sensitive, he has no member with which he can make the experiment. Except the elephant and the monkey, most of the "higher" animals suffer from this lack of the means of experiment. The wonder is, not that they suffer from illusions, but that they make so few mistakes.

The routine of chemical experiment gives some idea of the common means by which we guard against mistaking one thing for another. The inquirer notes the taste, scent, and colour, and judges of the weight, solubility, and, in the case of crystals, of the shape of the object he wishes to identify; he tries if it is brittle or tough, he heats it or cools it. In common everyday experience the number of "tests" unconsciously applied by men to prevent illusion and identify objects approaches much more nearly to the number prescribed for scientific inquiry than to the simple experiments used by animals. There is even a test for a ghost, which, since quoting Latin to it fell into disuse,

usually takes the form of seeing if it is "sensitive to percussion." Now, even this simple experiment is denied to a horse when uncertain as to the reality of a figure seen by twilight. In the absence of a hand the sense of touch is deficient in most animals. This, except in the case of birds, is not compensated by special acuteness of sight, though nearly all animals apply a sensible test to ascertain whether an object is living or inanimate. They wait to see if it moves; and to do this they know that the first condition is to keep absolutely still themselves. Most of the larger birds, notably wood-pigeons, remain perfectly motionless for many seconds after alighting in a new place, in order to identify any moving object. On the other hand, the power of scent is a great corrective to animal misconceptions about objects. It is their chief means of distinguishing the animate from the inanimate, and is always employed by them in the diagnosis of *death*. It would be interesting to know whether camels and horses share the illusions produced on men by mirage in the desert, or whether they are all the time aware that the seeming lakes of water are unreal. It is certain that they are frequently mistaken in sounds, for there are many authenticated instances in which animals have mistaken the mimicry of parrots for the call of their masters, and a nervous dog, which had a special dread of thunder, has been known to go into a fit when it heard a sack of coals being emptied into the cellar.

Parliamentary Intelligence.

The Importation of Live Cattle.

Sir JOHN KINLOCH asked the President of the Board of Agriculture whether it was the case that the English Board of Agriculture had advised the Irish Agricultural Department to prohibit the landing of live cattle at Belfast, to be slaughtered under the provisions of the Contagious Diseases (Animals) Act, as it might lead to the introduction of disease; and, if so, why were live cattle allowed to be landed in Great Britain?

Mr. WALTER LONG said that in reply to inquiries addressed to the Board of Agriculture by the Irish Government as to the proposed establishment of a foreign animals' wharf at Belfast, it was pointed out that experience in the past in Great Britain had shown that such wharves must necessarily be attended with a certain risk of the introduction of disease, whilst the small extent of the trade expected, and the fact that cattle were exported from Ireland in very large numbers, went to show that no real necessity for a wharf existed. The requirements of Great Britain and Ireland, in regard to foreign animals, were in no way similar, and any arrangement which might result in the interruption of the Irish export trade was obviously open to the very gravest objection.

Mr. M'CARTAN asked whether there was any more risk at Belfast than at Glasgow?

Mr. LONG said he did not say there was more risk at Belfast than at Glasgow. What he said was that in all these cases there was a certain risk; and as Ireland was an exporter of cattle, and not an importer, there did not appear to be the same necessity for a wharf as in an importing country.

In reply to a question by Mr. Wolff on the same subject,

Mr. GERALD BALFOUR said that the whole matter had received the most anxious consideration of the Irish Government, and they were unable, in the interests of the cattle trade of Belfast and the country generally, to alter the decision.

In reply to another question by Mr. Wolff on this subject,

Mr. CHAMBERLAIN said that a representation had been made to him by the

High Commissioner for Canada on the subject of the prohibition of the importation of Canadian cattle into Ireland. It was duly transmitted to the Irish Office, and received the careful consideration of Her Majesty's Government, who regretted that they were unable to alter their decision in the matter.

Replying to Mr. Ascroft,

Mr. LONG said that the United States cattle had been required to be slaughtered at the port of landing since March, 1879, and Argentine cattle had always been subject to that requirement. The number of cattle imported from the United States was approximately—300 in 1875, 400 in 1876, 11,500 in 1877, 68,000 in 1878. In the last four years the number had been:—397,000 in 1892, 249,000 in 1893, 381,000 in 1894, 274,000 in 1895. Very few Argentine cattle were imported prior to 1891. In that year we received about 4,000 head; in 1892, 3,500; In 1893, 6,900; in 1894, 9,500; and in 1895, nearly 39,000. The imports of beef averaged about 1,000,000 cwts. in the period 1881—1885; 1,300,000 cwts. in 1886—1890; and 2,700,000 cwts. in 1891—95. No figures were available as to the imports of mutton. In 1881—1885, and in 1886—1890, they averaged rather over 1,000,000 cwts.; and in 1891—1895, 2,150,000 cwts.

Cattle and Sheep in the United Kingdom.

Mr. LONG, in reply to Mr. Ascroft, said that there were 10,753,000 cattle and 29,775,000 sheep in the United Kingdom at the date of the last return. No official estimate of their value existed; but if £9 per head in the case of cattle, and £1 per head in the case of sheep, were taken as a fair average, the value of the cattle would be nearly £97,000,000, and that of sheep £30,000,000. Compensation for cattle slaughtered to prevent the spread of pleuro-pneumonia was payable in cases where the animal was found to be affected with the disease, at the rate of three-fourths of the value of the animal before it became so affected, with a maximum of £30. In every other case the full value was paid, with a maximum of £40. The amounts paid in Great Britain only by way of comp ensation have been:—£128,000 in 1890, £146,000 in 1891, £43,000 in 1892, £18,000 in 1893, £6,000 in 1894, and £145 in 1895.

Replying to a supplementary question by Mr. Ascroft,

Mr. LONG said that he was afraid he could not answer what the precise liability of the State for compensation was, and it would depend on the spread of disease. Unquestionably, the State was bound to pay compensation wherever slaughter was exercised.

Army Veterinary Department.

Moves.—Veterinary-Captain J. A. Meredith arrived at Aldershot from Dublin with the 15th Hussars on the 10th instant.

Appointment.—Extract from *London Gazette*, dated 14th July, 1896:—"Yeomanry Cavalry: The Queen's Own Worcestershire Hussars:—Edward Franklin, gent., to be Veterinary-Lieutenant. Dated 15th July, 1896."

Bombay Castle, 24*th June*, 1896.

No. 2749, Volunteer Corps:—

Appointments.—Bombay Light Horse: Veterinary-Major James Mills, Army Veterinary Department, to be Honorary Veterinary-Major.

By order of His Excellency the Right Honourable the Governor in Council.

(Signed) A. C. LOGAN.
Acting Secretary to Government.

True Copy.

J. MILLS,
Veterinary Major, A. V. D.,
Principal Bombay Veterinary College.

On the arrival of the 4th Hussars in India the 19th will hand over to it its Arab Horses at Bangalore and proceed to Secunderabad, where it will take over the mounts of the 21st Hussars.

Vet.-Col. A. E. Queripel, Inspector-General, Indian Civil Veterinary Department, is granted three months' leave. Vet.-Capt. H. T. Pease, will hold charge of the duties of the office during his absence.

A NEW ASEPTIC NEURECTOMY CASE.

MESSRS. ARNOLD & SONS, of West Smithfield, ever ready to advance the interests of the profession in their department, have made, at my suggestion, a case of aseptic neurectomy instruments which will, I think, prove a convenience to practitioners.

The case is nickel plated and is quite air-tight, and the rack can easily be removed. It contains the following instruments:—

A small pair of curved sharp-pointed scissors, two neurectomy knives, one with a blunt convex back and sharp straight cutting-edge, the other a short scalpel, a sharp pointed neurectomy needle, a bistoury for dividing the nerve, having at one end a blunt neurectomy needle and a pair of aseptic spring forceps. There is also a special compartment for suture needles and a spring for holding wire. The instruments have all steel handles, the forceps and scissors being disarticulated in order to allow of being cleaned.

HENRY GRAY, *Veterinary Surgeon*,
25, Lower Phillimore Place, High Street, Kensington, W.

TRADE CHANGES.

MR. C. H. HUISH, Surgical Instrument Maker, has recently opened extensive and well-appointed premises at

No. 8, FISHER STREET, RED LION SQUARE, W.C.
Close to the Royal College of Veterinary Surgeons.

Mr. Huish is at present making a speciality of his "Aseptic" and "Progressive" Instruments.

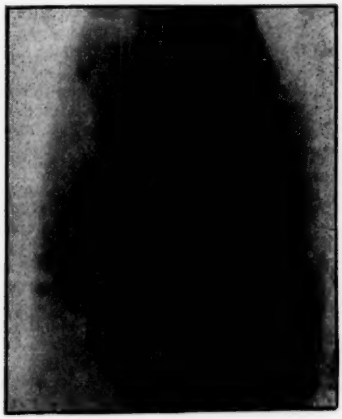
Correspondence.

To the Editor of THE VETERINARY JOURNAL.

Newton House, Alderley Lodge, Cheshire,
July 14th, 1896.

DEAR SIR,—Accompanying this note are two radiagrams (taken by myself) of two living horses' knees (no anæsthetics and the horses not stationary during the operation) one of which you will perceive is broken-kneed.

The two radiagrams are my *first* two attempts at horse radiagraphy, and as such are, I think, full of promise. The apparatus used was a Grove's battery of six quart cells, an App's ten-inch spark induction coil, a specially prepared focus tube by A. C. Cassor, together with other apparatus (for which a patent has been applied for), and which permits (within reasonable limits)



of the radiagraphing of the bones, etc., of living, moving horses. Radiagraphy has, we all know, been applied, with great success, to the human frame, and the device which I have invented will permit (as I have already proved) of its being applied with equal facility to the animal kingdom with even better results, perhaps, than in the case of the human body, for you *can* ask a human being what is the matter with him, and, *generally speaking*, receive a more or less intelligible answer. You cannot do the same thing to an animal. I intend pushing the new application vigorously forward, and will let you know, from time to time, my success in the matter.

I am, dear sir, yours very truly,
V. E. JOHNSON.

SALT AS A PREVENTIVE FOR LOUPING-ILL.

To the Editor of THE VETERINARY JOURNAL.

DEAR SIR,—Would you kindly insert the following, which has already appeared in the *North British Agriculturist*, with reference to my successful experiment on the Dumfriesshire farm, notorious on some parts of it for louping-ill for many years past :—

"SIR,—I was pleased to read Mr. M'Inroy's letter in your last issue, and to

note his practical confirmation of some of my views respecting the beneficial effects on the health of domestic animals by the judicious use of salt.

"The wild animals of the Indian jungles and their resorting to the salt-licks is a very old story. From the vast range of salt in nature, any good arising from its use should not, I think, be looked upon as a new discovery; for ages past the great beneficial actions of salt on the land, the dung-hill, and for sheep and cattle, have been observed by many noted writers, as the following extracts will show:—

"In the New Testament, St. Luke. chap. xiv., v. 34: 'Salt is good, but if the salt has lost his savour, wherewith shall it be seasoned?'

"M. P. Cato, who died 150 years B.C., says:—

"'When you lay up your straw, that which is most nutritious is to be laid under cover; sprinkle salt over it, then serve it for hay. If your sheep are scabby, take some lees of oil and water, in which lupines have been boiled and the dregs of good wine, mix them all together; when you have shorn your sheep, anoint them all over; suffer them to sweat for two or three days, then wash them in the sea; if you are not near the sea, make salt water and wash them with it. If you do this your sheep will not be scabby, they will have more fine wool, and the ticks will not molest them.'

"Virgil also bears undoubted testimony to the successful use of salt for cattle.

"In 1638 Lord Bacon expressly mentions the benefits derived from watering various vegetables with a solution of salt and water.

"Sir Hugh Pratt, in 1653, states 'that it is salt which makes all seeds to flourish and grow, and that no dung which is laid on barren grobnds would in any way enrich the same if it were not for the salt in it.'

In 1742 Professor Hoffman observes 'that small pieces of fossil or rock salt were given to animals to keep away internal corruption and disease.'

"Dr. Brownrigg, in 1748, says: 'Salt is dispersed all over nature; it fertilises the soil, it arises in vegetables, and from them is conveyed into animals, so that it may well be esteemed the universal condiment of nature, friendly and beneficial to all creatures endowed with life, whether it be vegetable or animal. When properly used as a manure, it affords ample nourishment to corn and other vegetables, and renders kingdoms rich and fertile.

"In 1817 Lord Kenyon, Sir Thomas Bernard, Bart., and Mr. Curwen, Workington Hall, bore testimony to its value as an admirable manure and for cattle.

"Sir Humphrey Davy says: 'Almost every species of plant is the peculiar resting-place or dominion of some insect tribe; a wonderful variety of inferior insects are nourished and live by their ravages upon the vegetable world.' I would go further than Sir Humphrey, and say that the insects which attack the various plants have again parasites peculiar to themselves, and well illustrated by Dean Swift in the following lines:—

> "The little fleas that do so tease
> Have smaller fleas that bite 'em,
> And these again have lesser fleas,
> And so *ad infinitum*.

"The foregoing points to the manifold virtues of this great natural commodity, and the wonder to me is that it is not more extensively used both on the land and amongst the stock. I can only think of two great faults that it has, *i.e.*, it is too cheap and too abundant.

"From the enormous quantities of rain that yearly falls is there any wonder the salts of the soils are carried into the great salt oceans, and thus the earth loses her savour. The washed-out condition of the land greatly facilitates

the development of the minute organisms—bacteria, bacilli, &c.—which, if not checked, infest and destroy our crops and herds.

"In 1874, after five years' practical observation, I wrote my first article on the application of salt to the land as a preventive of diseases in cattle and sheep, and since then I have written and read several papers as each year's experience further confirmed and strengthened my opinions.

"My first recommendation was for the prevention of Red Water (*Muir-Ill*) in cattle, which was a very extensive complaint in this district. The application of 6 to 10 cwt. of crushed rock salt (I find it the best) per acre has had in all cases the desired effect, as I never see a case new.

"The next experiment was for the prevention of Hoose (*Husk*), Black Leg, Liver Fluke (*Rot*), and Parasitic Diarrhœa (*Scour*) in young stirks. I must say thet the action has been marvellous, and it is now very rarely that I am called to a case of any of these maladies, whereas before the application of the salt they were very ripe in this locality.

"After a quarter of a century's observations I here strongly say that farmers and stockbreeders who have losses resulting from the ravages of these diseases have only themselves to blame, as the agent of prevention is both plentiful, cheap, and within easy reach of all.

"Referring to louping-ill in sheep, it is well known that the Highland and Agricultural Society, as well as several landed proprietors, have largely expended both time and money in order to discover its nature and the best means of preventing it, but as yet nothing definite has been arrived at. In 1880, after the success of the salt application to Millow Parks and various places in Cumberland, Lancashire, Leicestershire, and Surrey, I was anxious to try its merits as a preventive of louping-ill in Scotland, as I had never seen or heard of salt being named or recommended as a remedy, and from the successful results of the experiment on Leithen Hall Farm, recorded in your issue of 1st July, I am satisfied that the application of salt to the disease-infested pastures has had a most salutary action. Although Mr. Hamilton, whatever he may think, is not like the 'Aberdeen Laddie,' he does not say right out that 'it was the saut that did it.' Eh, man, Mr. Editor, a good story is never stale.

"A servant lad ran away from his place when his master pulled him up before the Sheriff. The case was proved against him; but as the lad had a bright, honest looking face, the Sheriff sympathised with him, and asked what he had to say for himself. The poor boy blubbered out, 'It was the saut that did it.' 'The saut,' said the Sheriff, 'what had the saut to do with it?' 'Oh,' replied the lad, 'shortly after I gaed there, an auld soo dee'd, and I was sent to the village for saut, and I helpit to eat her; and then there was an auld coo dee'd, and I was sent to the village again for saut, and I helpit to eat her; and then the auld wife dee'd, and I was sent a third time to the village for saut, so I thocht it was time I was clearing oo' to' that.' Needless to say, the case against the lad was dismissed.

"So much for the salt, and I am certain that it would make the microbes and parasites clear out as quick as it made the Aberdeen laddie, if it were more extensively used, as it is the best, cheapest, safest, and greatest germicide we have.—I am, &c., Hy. Thompson, M.R.C.V.S., Aspatria."

[The Editor must join issue with Mr. Thompson in his statement that no definite results arising from the investigations initiated by the Highland and Agricultural Society and others, have been arrived at. The cause of the disease has been clearly made out, and the Editor hopes that its prevention by the use of salt will be the success on further trial, that its advocate so zealously proclaims it to be. Most certainly in the above experiment, the success has been very great.]

To the Editor of THE VETERINARY JOURNAL.

Berwick-on-Tweed, *July 14th*, 1896.

DEAR SIR,—Perhaps the following item may be worth insertion in the JOURNAL. I take it from the *Berwick Advertiser* of July 10th, 1896:—

"*Extract from the annual report of the 'Duns Cow Club.'*"

"For a number of years past, the larger proportion of deaths among the cows have resulted from tuberculosis, mainly among cows imported into the district from the West of Scotland, especially when they are middle-aged. As this has become very apparent, the members exchanging cows of late have been almost exclusively purchasing young home-bred cows, which will ultimately prove beneficial both to the Society and to members generally.—With kindest wishes and regards, yours faithfully,

"JOHN CAMERON."

Notes and News.

A COUNTY COURT JUDGE ON THE RÖNTGEN RAYS.—At the Liverpool County Court on Monday, July 13th, during the hearing of an action under the Employers' Liability Act, in which a dock labourer claimed £150 damages for personal injuries, the plaintiff's counsel produced two photographs of the injured arm, taken by means of the Röntgen rays, which he proposed to put in as evidence. The defendant's counsel objected to them being received, and stated that he had no reason to believe that Dr. Buchanan, of the University College, by whom the photographs had been taken, was competent to produce reliable radiagraphs by the new process. Judge Shand said that from all he had read concerning the process he should himself be able to take photographs provided he had the necessary apparatus. Dr. Buchanan agreed, and stated that it was perfectly simple and could be done by anyone. Judge Shand thought he must admit the photographs, but it would be open to the defendant's counsel to address the jury regarding their value or otherwise. The photographs were then produced, and showed clearly the injury which had been done to the bone of plaintiff's arm. In summing up, Judge Shand alluded to the fact that this was the first occasion on which Röntgen photographs had been produced in that Court, and remarked that in such cases they were no doubt of great assistance. The jury awarded the plaintiff £60 damages.

Obituary.

Hunter, W. D., Dundee, Forfarshire (Fel. April, 1887)	July, 1881.
Baillie, R., Colinsburgh, Fifeshire	April, 1864.
Argyle, F., Leicester	May, 1894.
Aitkens, Robert, Felton, Northumberland	April, 1837.
Miller, Gavin, Glenluce, Wigtonshire	July, 1886.
Cockshoot, T. B., Hyde, Cheshire	March, 1881.
Palmer, W. J., Okehampton, Devon	March, 1880.
Frost, T. A., London	Dec., 1894.

Communications, Books, Journals, etc., Received.

Recueil de Médecine Vétérinaire (Alfort); La Presse Vétérinaire (Paris); L'Echo Vétérinaire (Liége); Annales de Médecine Vétériniare (Brussels); Berliner Thierärztliche Wochenschrift (Berlin): La Clinica Veterinaria Milan); Il Nuovo Ercolani Pisa); La Revista Veterinaria (Buenos Aires), La Gaceta Médica de Costa Rica; The Veterinary Magazine, etc., etc.